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A Lecture
ON
HIGH BLOOD PRESSURE
FROM THE CLINICAL ASPECT.

Given at St. Andrews (James Mackenzie) Institute for Clinical Research on Oct. 19th, 1926,

BY SIR HUMPHRY ROLLESTON, BART., K.C.B., M.D. CAMB., F.R.C.P. LOND.,
REGIUS PROFESSOR OF PHYSIC IN THE UNIVERSITY OF CAMBRIDGE.

HIGH blood pressure is a sign not a disease, and may, of course, appear temporarily as the result of transient mental emotion or toxæmia. But the form of high blood pressure that will be conveniently considered in connexion with the title "High Blood Pressure from the Clinical Aspect" is fairly constant, and corresponds to the condition called hyperpiesia by the late Sir Clifford Allbutt; this is the essential or idiopathic hypertension of American medicine. The word hyperpiesis was confined by Allbutt to the rise of blood pressure.

CLINICAL MANIFESTATIONS ASSOCIATED WITH HIGH BLOOD PRESSURE.

In the first place it will be advisable to consider the clinical manifestations that may be associated with high blood pressure alone, not "the symptoms of high blood pressure" (for, strictly speaking, the phrase clinical manifestations of a symptom is meaningless)—namely, in a person without any cardiorenal complications or arterio-sclerosis. What symptoms can be rightly associated with an abnormally high blood pressure? Are they directly due to it? Or are they concomitant results of the factor responsible for the high blood pressure? Because if the symptoms found in patients with a high blood pressure are due to a uræmic toxæmia or to a resulting or complicating arterio-sclerosis, a lecture on the clinical symptoms solely due to high blood pressure might appear to be like that of the famous chapter in Horrebow's "Natural History of Iceland," "There are no snakes to be met with throughout the whole island."

The physiological high blood pressure accompanying active physical exercise, the frequent freedom from symptoms in persons found to have high blood pressures in routine examinations, as for life assurance, and the malaise that may follow its too energetic reduction, are arguments in favour of the view that high blood pressure is a compensatory mechanism (Osler), for example, to prevent anæmia of the brain and medulla; and that some underlying disorder, metabolic, infective, or even of structural origin, makes it necessary that the individual's blood pressure should be set higher than that of the ordinary healthy person. This attractive explanation is hard to disprove.

The question whether or not the symptoms ascribed to high blood pressure are toxæmic and due to a concomitant or the same factor as the high blood pressure is difficult, but some light may be thrown on it by the following considerations. One conceivable method of arriving at an a priori notion of what symptoms might be anticipated solely from an unduly elevated blood pressure is to take the clinical manifestations associated with unduly low blood pressure (below 100 mm. Hg) in persons without obvious reasons for it, such as Addison's disease, cachexia, and malignant disease, and then to call to mind the exactly opposite manifestations. The symptoms associated with essential hypotension are somewhat vague, but are mainly loss of vigour—mental and bodily—easily produced fatigue, nervous instability, dizziness and giddiness, liability to faintness, insomnia, vasomotor instability, and sensitiveness to cold. In latent high blood pressure—namely, without any subjective discomfort—there is often, if not usually, a sense of well-being and energy. On the other hand, Sir Clifford Allbutt mentioned as symptoms of hyperpiesia, whether renal or non-renal, matutinal depression, languor, apathy even to torpor, fatigue, vertical headache or fullness or weight on the head, insomnia, beating of the heart, especially felt at night on the pillow, and added that in the hyperpietic patient these discomforts may be relieved by a blue pill, but not in the victim of renal disease in whom they are uræmic. Some symptoms, for example, tired feelings, headache, and giddiness, are common to subnormal and supernormal blood pressure, and it would seem reasonable to suggest that in both conditions they are due not so much to the abnormal blood pressure as to their causal toxins, pressor or depressor. This is supported by the late R. W. Michell's observations on the average low blood pressure, often nearly 110 mm. systolic (which some authorities (Fossier) regard as hypotension) of athletic undergraduates at Cambridge, who certainly do not suffer easily from muscular fatigue

As a high blood pressure is often found in the routine examination, as for life assurance, of persons who feel perfectly well, this might be held to justify the generalisation that a high blood pressure without any other factor, whether chemical, such as toxæmia, or structural, such as arterio sclerosis, does not cause symptoms. Before arriving at such a final conclusion it is worth consideration how far the varying sensitiveness of individuals may determine whether or not they react to stimuli or remain unconscious of them. About the existence of such variation in the response to stimuli there, of course, cannot be any doubt. Libman has described a simple physical test by which individuals can be divided into the hyposensitive, the normally sensitive, and the hypersensitive, according to their sensations when pressure is exerted by the thumb on the styloid process of the temporal bone (and the great auricular nerve). Some persons do not experience any pain (hyposensitives) and others a great deal (hypersensitives). He explains the syndrome of angina sine dolore by the hyposensitive character of the patient. If by analogy this is applied to high blood pressure it would appear that in the earlier stages of the condition a large number of persons are hyposensitive and that in the later stages they become hypersensitive. Though at first sight this may seem an unwarrantable assumption, it is not inconceivable, that if, as is probable, high blood pressure is often due to toxins derived from protein splitting, their continued action on the nervous system might lead to a condition of hypersensitiveness.

Although persistent high blood pressure may for a long time be unaccompanied by any symptoms, the question arises as to the existence, though it cannot be detected by physical examination, or even by renal efficiency tests, of early structural changes in the kidneys or blood-vessels, especially of the medulla oblongata. F. M. Allen states dogmatically that high blood pressure never exists with normal kidneys, but qualifies this by admitting that even in rather severe and long-standing hypertension the renal lesions may be limited to such slight changes in the small arteries that only close study reveals them. O'Hare and Walker compared 50 cases of arterio-sclerosis in which the renal arteries were affected and there was a raised blood pressure, with 50 cases of general arterio-sclerosis without either disease of the renal arteries or high blood pressure. Other evidence does not tend to support the exclusively renal origin of high blood pressure; in 72 cases Fishberg found the renal arteries affected in 65 per cent., and these were obviously cases in a late stage.

As has been shown by Starling and Anrep, impairment of the blood-supply to the vasomotor centre in the medulla at once calls forth a compensating rise in blood pressure. A definite association of arterio-sclerotic changes in the medulla with high blood pressure appears to be shown by Bordley and Baker's examination of 24 cases of generalised

arterio-sclerosis; 14 of these with high blood pressure during life constantly showed arteriolar sclerosis in the medulla oblongata and in the kidneys; in the remaining 10, with a normal blood pressure in life, the arterioles in the medulla were healthy at the necropsy. As cerebral arterio-sclerosis may exist without peripheral arterio-sclerosis, it is possible that some cases of high blood pressure are due to sclerotic changes limited to the basilar artery and its branches; but it is unlikely that such arteriolar lesions in the medulla would precede and last so long, as they would have to do in many cases, before producing other nervous symptoms. On the other hand, it is conceivable that some poison to which the vessels of the medulla are susceptible, in a way analogous to imperfectly oxygenated blood, may lead to their vaso-constriction, and so induce a general rise of blood pressure.

It may be noted that, although evidence of retinal arterio-sclerosis is a good guide to the presence of the same change in the brain (Foster Moore, 1916), retinal arterio-sclerosis has been described microscopically when not previously detected ophthalmoscopically (Cohen).

CLINICAL PICTURE.

It is not proposed to consider the much-discussed ætiology of high blood pressure, but there is a subject midway between ætiology and the clinical picture—namely, the anthropometric characters of persons affected with this condition. The hereditary tendency to high blood pressure is well established, and, according to Alvarez, it is a bodily peculiarity inherited equally by boys and girls, but with its manifestations in the female sex delayed until the menopause. Structure and function are so closely inter-related that the "constitution" of a hyperpietic may well show physiological variations from the normal in the direction of exaggerated vasomotor response (Dawson) as well as physical characteristics. Although the make-up or constitution of the body only favours the incidence, and does not indicate the existence, of high blood pressure, the presence of these characteristics enters into the clinical picture of the disorder, and enters into the composite picture which is so quickly recognised in the process of making a facial diagnosis. George Draper has applied the most accurate anthropological methods to the problems of disease, and investigated the physical characters of a number of diseases, one of which is the group of nephritic and high blood pressure patients, based on complete examination of 19 males and 20 females, and it is noteworthy that the characters often differ in the sexes. The time is hardly ripe for a final characteristic picture of the subjects of supernormal tension, but a few of Draper's conclusions may be quoted. The males are small and have the shortest heads, whereas the females are very large, have protruding upper teeth, are heavy faced, more masculine, have longer heads as compared with other disease groups, and, showing physical signs on the lines of acromegaly and previous pituitary activity, are more prone under the specific stimulus of pregnancy to develop high blood pressure or nephritis. Both sexes have the short necks popularly associated with apoplexy. The statistics of the Life Extension Institute of New York show that overweight is more often than a normal weight associated with high blood pressure, but that the incidence of arterial sclerosis in the adipose hypertensives is lower than in normal persons. Possibly this rather unexpected result may be due to difficulty in palpating the radial artery in stout people (Dublin, Fisk, and Kopf). In women about the menopause obesity and high blood pressure often go together, and according to Garvin these two conditions are probably associated results of some underlying factor; he found high blood pressure in 33 per cent. of 200 obese persons, two-thirds of them being women, as compared with 12 per cent. among non-obese controls.

Slightly modifying Lewellys Barker's paradigm of high blood pressure in four groups corresponding to four successive periods common to all the cases, the following stages may be suggested:—

1. Early high blood pressure without any cardiac, arterial, or renal changes as far as can be determined.
2. In which hypertrophy of the left ventricle, but no discoverable arterio-sclerosis, has resulted.
3. In which arterio-sclerosis and renal fibrosis have followed continued high blood pressure, and give rise to the complications in
4. The brain, arterio-sclerotic changes, cerebral hæmorrhage; kidney, chronic interstitial nephritis, uræmia; heart, myocardial failure.

Such a division into stages has the advantage of distinguishing between high blood pressure alone on the one hand and its results and complications on the other. In attempting to estimate the symptoms solely due to high blood pressure, those in the last two groups—namely associated with resulting arterio-sclerosis—must, of course, be excluded. Leslie T. Thorne has also classified cases into four groups, according as the high blood pressure is or is not associated with arterial change, and according as the heart is or is not dilated as a result of the unusual strain.

It will be advisable to discuss separately the physical signs and the symptoms that have been ascribed to high blood pressure with the object of determining how far they can be regarded as solely due to it.

Physical Signs.

The diagnosis, of course, depends on one physical sign—the raised blood pressure taken with precautions to avoid the high blood pressure due to excitement. Very considerable variations in blood pressure may occur from time to time, and this instability is a feature of supernormal pressure. Accentuation of the aortic second sound, on which considerable reliance was placed in the days before the vogue of the sphygmomanometer, is not such an absolutely accurate sign of increased blood pressure, as it occurs as the result of atheromatous dilatation of the first part of the aorta.

Hæmorrhages in various positions are occasionally seen in persons with high blood pressure; but that they are due solely to it and independently of gross vascular lesions, such as arterio-sclerosis and of toxæmia, appears improbable from their infrequency in uncomplicated cases. A sign of importance, though often depending on some local conditions, such as ulcer, angiomatous or other change in the vessels, is a sudden hæmorrhage from a mucous surface (epistaxis is the commonest), and may come as a very unpleasant and ominous surprise to a man who believed himself to be in perfect health. Epistaxis may, it is said, occur in high blood pressure without any evidence of a local cause, such as n ulcer. Profuse gastro-intestinal hæmorrhage is much rarer, and naturally suggests a peptic or other ulcer, but this does not appear to explain all the cases. Rudolf records the case of a man without evidence of renal disease or arterio-sclerosis who with a blood pressure of 180/110 had severe hæmatemesis on three occasions; after the first his abdomen was opened, but no cause was found; after the other attacks he felt better and his pressure was 150/100. Non-tuberculous hæmoptysis has been described in supernormal blood pressure (Allbutt; F. de H. Hall; Rossi); it is analogous to epistaxis, and recalls Andrew Clark's "non-tuberculous and non-cardiac hæmoptysis of elderly persons." It would be natural to ascribe these to some structural change, such as emphysema or arterio-sclerosis, especially in elderly persons, but Allbutt considered that they might occur independently of any local vascular disease.

Retinal hæmorrhages are common in persons with high blood pressure and arterio-sclerosis, but the question arises whether or not they ever occur in high blood pressure without any vascular change. As the condition of the arteries of the retina have been more carefully and frequently examined than those of the nasal and gastro-intestinal mucous membranes, a decision on the question whether or not local vascular

disease is responsible for hæmorrhages in high blood pressure can, perhaps, be obtained with the assistance of ophthalmologists. It appears probable that high blood pressure alone is not sufficient to cause hæmorrhages from healthy vessels, but that given vascular disease, whether arterio-sclerotic or acutely toxic, hæmorrhages are more likely to occur with a high blood pressure.

Mr. Foster Moore argues that they are due to disease of the vessel wall and not to high blood pressure alone; his reasons for this are that they are very common in arterio-sclerosis and after retinal thrombosis, which is usually the result of local vascular disease (1924), and in leukæmia, pernicious anæmia, and rapidly produced secondary anæmia in which there is not any rise of blood pressure; that they may rapidly increase towards the end of life without any corresponding rise of blood pressure (1917); and that in arterio-sclerosis the blood pressure is not raised in the retinal arteries (1916). He also finds that the women among his cases were more tolerant of high blood pressure, as judged by survival, than men. Dr. Anthony Feiling has reported 100 cases of hyperpiesia, arterio-sclerosis, and chronic renal disease with retinal changes or vitreous hæmorrhages, in which the visual defect was the chief and generally the only symptom; he has kindly informed me that, while it is very difficult to exclude vascular change, high blood pressure, though an important auxiliary factor, is not likely to be the sole cause of retinal changes; but he considers that retinal hæmorrhages are very uncommon, even in well-marked general arterio-sclerosis, in the absence of high blood pressure. Dr. Maitland Ramsay writes that with healthy retinal vessels there is not much risk of intra-ocular hæmorrhage.

This question of hæmorrhage in high blood pressure is obviously important in connexion with cerebral hæmorrhage; the conclusion that hæmorrhage does not occur except when the vessels are damaged appears to hold good also with regard to intracranial hæmorrhage.

The Rumpel-Leede phenomenon—namely, the appearance of minute petechial hæmorrhages in the skin distal to the area of pressure after the estimation of blood pressure—is rare in my experience; as it is said to occur also in menstruating women, scarlet fever, and chronic infective endocarditis (Weissmann) it cannot be regarded as pathognomonic of high blood pressure, and is very probably due to endothelial degeneration.

Blood.

It is not uncommon, in spite of the frequency of pallor in persons with supernormal blood pressure, to find some degree of polycythæmia; Lenaz found that the red count varies with the systolic pressure in a constant manner, there being a quotient of 25 between the systolic pressure expressed in millimetres of mercury and the number of millions of the red cells; thus blood pressures of 125, 150, and 170 are associated with red counts of 5, 6, and 6·8 millions. But this hardly holds good. In the cases described as polycythæmia hypertonica (Geisböck), of which Parkes Weber has collected eight with blood counts and blood pressures, there is certainly a general but not absolute agreement with this rule, but by definition there must be both polycythæmia and high blood pressure. It appears that these cases are usually complicated by chronic interstitial nephritis. Differences in the association of high blood pressure and increase in the number of red cells may be explained on the grounds (1) that increased viscosity of the blood in erythræmia may raise the blood pressure, and (2) that increased arterial blood pressure does not alone raise the red count, but only when associated with a rise in the capillary pressure which then leads to concentration of the blood and a fall in its water content (Lomaz). In pure hyperpiesia (without any renal disease) Boas and Frant state that the capillary pressure was not raised; Kylin found the capillary pressure high in glomerular nephritis but not raised in granular kidney. From these observations it might appear that the red count depends on a factor additional to high arterial blood pressure—namely, one, such as glomerular nephritis, which raises the capillary pressure.

Increased excretion of urine and nocturnal micturition are direct and physiological results of raised blood pressure, but the specific gravity of the urine is not necessarily lowered.

The metabolic rate in high blood pressure would, from the observations of Aub and Dubois and of Shapiro, appear not to be raised unless dyspnœa is present.

The Relation between High Blood Pressure and Hyperglycæmia.—In 1910 Neubauer found hyperglycæmia in a large proportion of the cases of very high blood pressure, and ascribed this to excessive adrenal activity. Von Noorden accepted this, but subsequent observers rejected it, finding that very high pressure may exist without hyperglycæmia. But hyperglycæmia without hypertension is infrequent. G. C. Linder, A. Hiller, and D. D. van Slyke conclude that there is not any constant relation between high blood pressure and hyperglycæmia, and Herrick isolates a group of cases with high blood pressure, hyperglycæmia, obesity, and arterio-sclerosis, thus suggesting rather widespread metabolic disorder; Westphal found the cholesterol-content of the blood raised in 71 per cent. of persons with a high blood pressure, and believed that the cholesterol excess caused the raised blood pressure, but it might be regarded as the result of accompanying arterio-sclerosis.

A Beating Leg.—According to Molle, oscillation of the leg when crossed over the other knee, as in testing the knee-jerks, shows that the blood pressure is over 160 mm. Hg. But this phenomenon, so familiar in aortic incompetence, would appear to depend on a large pulse pressure. The late Sir Clifford Allbutt told me that he had had it all his (noticing) life, and that he had a slow pulse (48-52) and a large pulse pressure, or, as he preferred to call it, differential pressure.

A new physical sign of high blood pressure has been described by Brown and Rowntree, of the Mayo Clinic; it is said to occur only in women, and not to occur in arterio-sclerosis. It consists in pulsation in the lower part of the neck on the right side, and may imitate aneurysm. It depends on elevation of the aortic arch, which, therefore, lifts up the right subclavian artery and kinks or buckles the right common carotid artery.

Transient arterial spasm, comparable with that in Raynaud's disease and migraine, has been thought to explain, by the resulting anæmia of cortical areas, temporary aphasia, amblyopia, hemiplegia, mental confusion, and loss of memory (Pal; W. Russell; Williamson); nitrite of amyl and vasodilators have therefore, been recommended for these slight strokes, cerebral crises, or cerebral eclipses as they have been graphically called. On the analogy of Raynaud's disease and migraine, which may show visible spasmodic contraction of the arteries of the retina, which is a prolongation of the brain, this comforting explanation of simple spasm seems to be quite reasonable, but it is probable that there is often more behind—namely, arterio-sclerosis of the cerebral vessels. Osler bracketted high blood pressure with arterio-sclerosis as the cause of these transient cerebral seizures in a paper recording their duration for five years in a medical friend with "arteries like whip-cord," and mentioning that he had seen a score or more cases, in three of which there was no palpable arterio-sclerosis. In the intervals between the attacks the general health may be perfectly good, and possibly there are several causes for these seizures—viz., simple migrainoid spasm in some, probably few, cases; in some "uræmic" or toxæmic spasm; more often cerebral arterio-sclerosis, or even minute areas of softening or of hæmorrhage. Some authorities (Peabody) believe that arterio-sclerotic vessels are more prone than healthy ones to undergo spasmodic contraction and that anginoid pain may be due to spasm, set up by tobacco or other stimuli, of the sclerosed coronary arteries, or that colic, or angina abdominis, may be due to a similar process in the mesenteric arteries.

The late Sir Clifford Allbutt discussed these transient strokes on two occasions at some length, and ascribed them to tiny hæmorrhages, giving examples of such lesions found after death, and pointing out that they may be recognisable only on microscopical examination; he was vigorously opposed to the responsibility of arterial spasm and local œdema, and the view that a terio-sclerotic vessels are more prone than healthy ones to spasm. A clinical justification for the view that these slight strokes are due to minute hæmorrhages is the frequency with which these slight strokes are followed by undoubted cerebral hæmorrhages.

Hypertrophy of the left ventricle, which is a compensatory effect of continued high arterial blood pressure, may be followed by cardiac dilatation and insufficiency. Arterio-sclerosis is another effect of high blood pressure; it and cardiac failure produce their own series of symptoms, which, being indirectly derived from high blood pressure, do not come within the scope of the present, perhaps artificially, restricted discussion—namely, the symptoms of raised blood pressure alone.

Shortness of breath on exertion, often stated to be an early symptom of high blood pressure, was very definitely regarded by Sir Clifford Allbutt as evidence that the patient has entered upon the last stage of his malady and of myocardial strain. My own impression is that this dyspnœa is a phenomenon of the stage when well-marked arterio-sclerosis has supervened; but this may not be invariably true. The diaphragm is usually high in fat people, and Leonard Williams explains the dyspnœa of obese hyperpietics as due to interference with the descent of the diaphragm by the omental accumulation of fat, and refers to the "basitis," described by Heckel, or localised œdema at the base of one or other lung caused by abdominal lipomatosis. It is obviously necessary to bear in mind other causes of dyspnœa, such as emphysema.

SYMPTOMS.

Numerous subjective symptoms have been ascribed to high blood pressure, but very often the distinction between pure supernormal pressure and what has been called organic hyperpiesia—namely, complicated by arterio-sclerosis—has not been borne in mind. This applies, perhaps, particularly to some of the nervous symptoms, as has been seen in regard to transient paralyses.

Headache due to high blood pressure is often mentioned, but is there any evidence that it is solely due to this cause and not to the toxæmia connected with the supernormal pressure? In favour of the direct causal relation of high blood pressure is the relief obtained by some patients from amyl nitrite and vasodilators. The late Sir Lauder Brunton, from too frequent opportunities of studying it in his own person, explained the headache of migraine as due to proximal dilatation and peripheral contraction of the temporal artery. The cause of migraine is unsettled, but hypersensitiveness to some poison causing arterial spasm seems a reasonable hypothesis; the toxic nature of migraine, however, has not met with much support. Lumbar puncture relieves the headache of some persons with high blood pressure; if the increased amount of cerebro-spinal fluid was due to some interference with its removal, the resulting rise in the intracranial pressure would cause both the headache and, by rendering anæmic the vasomotor centre in the medulla, the rise of blood pressure. The familiar experience that some high blood pressure headaches are removed by calomel, salts, and the subsequent purgation, is in favour of a toxic origin. It is significant that headache is also found in people with a low blood pressure, thus suggesting that the headache both in the hypertensive and the hypotensive is toxic, and that any variations in the character of the respective headaches are due to the toxins being different—pressor and depressor.

Vertigo.—Spasm of the vestibular branch of the internal auditory artery, producing from anoxæmia hypersensitiveness of the vestibular receptors (Mills), or of other intracranial arteries, causing cortical anæmia, has been suggested as a cause of vertigo; but it is difficult, if not impossible, to exclude arterio-sclerosis of these vessels. Again, the direct action of toxins on the semicircular canals must be taken into consideration. Further, as vertigo is not a constant symptom of high blood pressure, and as it may be caused by toxæmia, it would appear to be more probably thus excited in hyperpiesia.

Sir Kenneth Goadby tells me that in a number of patients he has noticed vertigo to coincide with a difference in the systolic blood pressure in the two arms, the attacks of vertigo corresponding with this difference and disappearing when the blood pressures on the two sides become equal. This observation, the result of a systematic examination of the blood pressure in both arms and both legs, raises the questions of the causation of the difference in the blood pressure on the two sides and the mechanism of the production of vertigo; in Goadby's cases the intermittent character of the difference in the blood pressure on the two sides of the body suggests spasm or vaso-dilatation, and an analogy with migraine and the transient strokes. The significance of considerable variation of the systolic blood pressure on the two sides of the body varies, and when inconstant may perhaps have a bearing on Goadby's observations on vertigo, but in what way is very speculative.

Differences in the blood pressure on the two sides of the body may be due to anatomical abnormalities or arterio-sclerosis, and then is constant; it may also be found in hemiplegia, although usually slight in amount, and Dana associated this with thalamic lesions, there being a fall of blood pressure on the paralysed side due to vaso-dilatation. In pulmonary tuberculosis R. J. Cyriax found the systolic pressure unequal, usually lower on the affected or more diseased side; in unilateral trauma and in bilateral injuries of different degrees the systolic blood pressure varied on the two sides, but was not constantly higher on the same side (E. F. Cyriax).

Neurasthenic symptoms may be prominent with high blood pressure, but their frequent absence in high blood pressure makes it highly probable that they are due to an underlying toxæmia. Tingling in the hands and feet is toxic or uræmic in origin, and intermittent claudication or limp is fundamentally arterio-sclerotic, though no doubt superadded spasm may cause exacerbations of pain.

Cardiac pain of an anginoid character, on exertion, may occur in association with high blood pressure, and has been explained as the result of stretching of the first part of the aorta; but even so, it is difficult to exclude arterial changes in this part of the aorta and in the coronary arteries.

Abdominal Symptoms.—Some, such as flatulence, dyspepsia, "torpid liver," are rather doubtful, as they may be part of over-eating or gastro-intestinal toxæmia responsible for the high pressure and concomitant results. In rare cases periodic attacks of vomiting—migraine without the headache and ocular sensations—occur. Possibly some cases of abdominal pain, "angina abdominis," may be due to spasm of mesenteric arteries. "Angina abdominis," which was described in this country by Sir Lauder Brunton and by Parkes Weber, includes (1) angina pectoris with the pain referred to the abdomen, and (2) the analogue of intermittent claudication—namely, pain associated with arterio-sclerosis of the mesenteric arteries—but the important factor in intermittent claudication is the arterio-sclerosis, not the high blood pressure.

CONCLUSION.

On the whole it seems probable that high blood pressure alone is not a potent cause of symptoms, but that the association of symptoms, which is so widely recognised, is due either to the cause, such as toxæmia, of high blood pressure, to concomitant or resulting arterio-sclerosis, or to cardiac failure. But high blood pressure has important bearings on prognosis, as has been shown by the statistics of life assurance offices, and should always be the signal

for intensive investigation of an underlying cause—dietetic, psychological, environmental, toxi-infective, and renal. That it is a danger signal in puerperal toxæmia is well recognised.

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MANCHESTER LITERARY AND PHILOSOPHICAL SOCIETY.—The Carnegie Trust has made a grant of £500 towards the upkeep of this society, which was one of the oldest scientific institutions, founded in 1781 and is historically associated with the names and work of Dalton and Joule.

THE LATE DR. ALEXANDER LAWRENCE.—The death occurred on Nov. 23rd, at his residence at Hough Green, Chester, of Dr. Alexander Lawrence, at the age of 80. Dr. Lawrence was born at Cullen, Banffshire, educated at the University of Aberdeen, where he graduated M.A. in 1866, and M.D. in 1872. He was for a time house surgeon and superintendent at Chalmers' Hospital, Banff, and later a clinical clerk in the West Riding Asylum, Wakefield. In 1870, at the age of 25, he was appointed second assistant medical officer to the Chester Medical Hospital, where there were then about 500 patients. In 1895 he became superintendent of the hospital in succession to Dr. J. H. Davidson and during his period of service the number of patients increased to 1100. He retired on superannuation in 1910. Dr. Lawrence was a keen golfer and started the Bache Golf Club, of which he became the first president.

POST-SCARLATINAL MENINGITIS.*

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IN view of the acknowledged rarity of meningitis as a complication or sequela of scarlet fever, the following case may be regarded as of sufficient interest to record, and so to rescue from oblivion:—

J. J. M., a girl, aged 6 years, was a patient at the South-Western Hospital from the middle of January, 1925, for close on two months. During this period she passed through an ordinary though sharp attack of scarlet fever, without other complication than adenitis in the third week, and evidence of ear trouble was conspicuously absent. She was discharged to her home on March 11th, and soon after complained of right earache. She remained otherwise apparently well for a period of three weeks, when she began to suffer from severe headache, which persisted, and was referred to the vertex. A week later pain and stiffness in the posterior cervical muscles developed, followed by profuse vomiting, and she became very drowsy.

On April 14th she was admitted to St. James's Hospital, Balham, in a semi-comatose state, with a temperature of 104·8° F. and typical signs of meningitis. She lay curled up in bed: there was marked cervical rigidity, conjugate deviation of the eyes to the right, and twitching of face and limb muscles. No ear discharge was noted. Kernig's sign was well marked, and the patellar reflexes were absent.

Lumbar puncture was performed on the 15th, and yielded a considerable quantity of cloudy fluid under great pressure. Death occurred on the following day, but consent to perform post-mortem examination was, unfortunately, refused.

Examination of the Cerebro-spinal Fluid.—Very turbid, faintly yellow fluid, yielding a fine viscid coagulum, and on centrifugation a heavy cell deposit. Albumin 0·1 per cent., globulin in excess, dextrose very faint trace. Stained film preparations from the clot and cell deposit showed abundant polymorphs, in marked excess of lymphocytes, and a few Gram-positive cocci in pairs and short chains. Cultivation of the fluid on agar yielded a scanty number of colonies of a long-chained streptococcus. Ample growth was, however, obtained in subculture on blood-agar of streptococcal colonies which were definitely hæmolytic. The blood-agar subculture was submitted to Dr. F. Griffith, bacteriologist to the Ministry of Health, who kindly undertook serological tests. He reported that the streptococcus was serologically identical with one of the strains isolated by Dochez in association with scarlet fever.[1] It was, moreover, the only homologue of the Dochez strain which had so far been found in this country, affording also the only instance apparently recorded in which *Streptococcus scarlatinæ* has been isolated and verified from the cerebro-spinal fluid.

Remarks.

The results of the serological tests would seem to demonstrate a clear link between the original attack of scarlet fever and the ultimate fatal meningitis. It is possible, if not probable, that post-mortem examination would have shown an intermediate focal infection of the middle ear; for, as already stated, there was a history of pain in the right ear for the first time after return home from the fever hospital, without, however, the further evidence of otorrhœa.

As René Benard [1] and others have emphasised, even though careful examination during life may fail to show any indication of involvement of the middle ear, frontal or sphenoidal sinuses, yet post-mortem examination may not uncommonly show unmistakable evidence of an otitis or sinusitis as a source of secondary meningeal infection in cases which might otherwise be regarded as primary meningitis and septicæmic in origin. Meningitis, when it occurs, is more often a late development, with onset about the period of desquamation, seldom as early as the fourth to eighth day of the fever. It has been described by the various observers as occurring on the fourteenth, twentieth, twenty-fourth, thirtieth and thirty-fifth, and even as late as the forty-fifth and fifty-fifth days.

* Read at a meeting of the Metropolitan Branch of the Society of Medical Officers of Health on Nov. 12th.

† It may be convenient to state that unofficial communications, such as this, from medical officers of the London County Council, must not be taken as expressing the views of the Council but only those of the individual officer.—ED. L.

In the case above recorded it may be noted that the first symptom of meningitis—headache—did not appear until the tenth week after the rash, and death followed 12 days later. The usual clinical course presents the classic picture of meningitis, with a duration described as ranging from one to eight or 16 days. Although Benard quotes a case recorded by Netter, in which recovery took place from streptococcal meningitis supervening on scarlatinal otitis, such an event is extremely rare, and the complication must be regarded as almost invariably fatal, unless prompt and effective operative measures are possible at an early date.

Previous Records of Scarlatinal Meningitis.

The records of meningitis complicating or following scarlet fever, even when secondary to an otitis media or sinusitis, are comparatively few, still more uncommon are the undoubted primary cases with no other focal lesion.

(1) *Observations in this Country.*—Dr. F. F. Caiger,[2] in his analysis of 1008 cases of scarlet fever in 1891, recorded complication by otitis media in 125, or 12·9 per cent., rhinitis in 58, or 6 per cent., but not one case of meningitis. In his later experience of the disease during the past 35 years Dr. Caiger writes that he could recall a few cases of scarlatinal otitis with mastoid suppuration, which terminated in meningitis, but only one in which meningitis was not secondary to middle-ear disease. I am also much indebted to Dr. E. W. Goodall for similar evidence of the rarity of a primary meningitis, supplied by his search into the post-mortem records of fatal scarlet fever for the past 30 years at the North-Western and Eastern Hospitals, which failed to show a single case of meningitis without otitis media as the cause of meningeal infection.

Reference is made by J. D. Rolleston,[3] in his text-book on "Acute Infectious Diseases" (1925), to the nervous phenomena not uncommonly met with in severe attacks of scarlet fever, and manifesting "some degree of meningeal reaction, shown clinically by slight nuchal rigidity, headache, and delirium, and on lumbar puncture by hypertension, with or without lymphocytosis of the cerebro-spinal fluid, which is clear and sterile. Suppurative meningitis is almost always secondary to otitis, rhinitis, or arthritis, but there are about eight cases on record of primary suppurative meningitis."

Also the late Claude B. Ker,[4] in his second edition of "Infectious Diseases" (1920), among the complications of scarlet fever, stated, "it is obvious that meningitis may occur in patients in whom the middle ear is seriously affected, and I have seen one fatal streptococcal case in which the ears were reported to be normal by an otologist."

(2) *Continental Records.*—The most complete account of meningitis complicating or following scarlet fever is to be found in the exhaustive paper by René Benard [1] (1909), who succeeded in collecting from statistics published in this country and on the continent a total of 13,550 cases of scarlet fever, among which only nine were reported as complicated by meningitis—i.e., less than 1 in 1500. He classified the available records of some 40 cases claimed to be scarlatinal meningitis into two groups: (1) Those published previous to 1900, in which meningitis was diagnosed mainly on clinical grounds from the exhibition of nervous phenomena in the course of an attack of scarlet fever. (2) Those reported after 1900, when, as the result of the introduction of lumbar puncture, it was possible to determine the nature of the meningeal reaction, whether constituting a true meningitis or not. Quite a proportion of the 40 collected cases he criticised as based on the insufficient evidence of clinical data only, without details of the cerebro-spinal fluid, or unsupported by post-mortem examination, and therefore open to doubt. Out of 28 authenticated cases of secondary meningitis, however, of which he found records, 14, or 50 per cent., were associated with otitis media, four with purulent rhinitis or coryza, two with suppurative arthritis, and in the remainder there was evidence of other focal infections such as frontal sinusitis, purulent ophthalmia, cellulitis, and pneumonia, occurring in the course of scarlet fever.

The probable paths of infection Benard maintained to be either by direct spread from the middle ear, mastoid or frontal sinus, or by transit through local lymphatics or blood capillaries, without necessarily visible continuity between inflammatory focus and meninges. Whereas a streptococcal invasion of the general circulation without focal infection was responsible for the much rarer condition of primary meningitis, there were also cases of secondary meningitis as the result of blood infection attributable to a distant streptococcal focus—e.g., scarlatinal arthritis. A sharp distinction was, therefore, drawn by Benard between primary and secondary meningitis, and as genuine cases of the former he accepted only those in which careful search during life and at post-mortem examination had failed to show any localised source of infection.

To the primary group undoubtedly belonged the eight cases collected or personally recorded by Teissier and Duvoir [5] in 1908, and more recently by them and Boudon [6] in 1922. As example may be cited one of Teissier's cases, of a youth, aged 20, who had an ordinary attack of scarlet fever, and on the eighteenth day (April 2nd) developed a rise of temperature to 40·4° C. with headache; later, insomnia, diarrhœa, and epileptic convulsions of Jacksonian type. On April 13th lumbar puncture yielded turbid purulent fluid showing many polymorphs and abundant long streptococcal chains. Death occurred on the following day, and post-mortem examination showed fibrinous purulent exudate over both vertex and base of the brain. The bones of the skull, mastoid, internal, and middle ear proved to be healthy.

Degrees of Meningeal Reaction in Scarlet Fever.

The above-mentioned writers also described cases of meningeal infection without cellular reaction, occurring as a transitory condition in the course of severe attacks of scarlet fever, from which recovery was possible; and Dr. Goodall has informed me that he has had very occasional experience of scarlatinal patients developing meningeal symptoms and recovering without other evidence of real meningitis. Although seldom met with, Benard drew attention to the same condition in his paper in 1909, and recognised varying degrees of meningeal reaction in response to the presence of the scarlatinal infective agent, whether a virus, whose nature is unknown, or a streptococcus or some other organism.

The character of the reaction lumbar puncture alone could determine, and thus assist in forming a prognosis. The following types were defined by Benard:—

1. Less severe and transitory states of meningismus associated with delirium, in which quite clear cerebro-spinal fluid was obtained in a state of hypertension to the amount of 35 c.cm. in 15 seconds, yielding no organisms and very few lymphocytes, or streptococci only, without evidence of cell reaction.

2. Those showing a more intense reaction—e.g., by a lymphocytosis of 80 cells per field and the presence of streptococci, as in a case recorded which recovered 35 days later. When such cases proved fatal, post-mortem examination showed no more than meningeal congestion and subpial hæmorrhages without evident meningitis.

3. Intermediate between the congestive meningeal reaction and the purulent form of meningitis was also recognised a sero-fibrinous pachy-meningitis with turbid gelatinous exudate composed chiefly of lymphocytes, distinct from:—

(4) The acute suppurative meningitis yielding turbid fluid with deposit of pus cells and streptococci in films and culture, and showing a more or less thick layer of pus in the meninges of both vertex and base, to which more usual type the case here recorded probably belonged.

My thanks are due to Dr. Caiger and Dr. W. MacCormac for kindly providing the clinical notes of the patient when at the South-Western and St. James's Hospitals, also to Dr. Caiger and Dr. Goodall for the benefit of their unrivalled experience of scarlet fever, and to Dr. F. Griffith for determining the type of streptococcus isolated from the cerebro-spinal fluid.

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THE LATE DR. J. F. GEMMEL.—Dr. James Francis Gemmel, who died on Nov. 22nd at Joppa, near Edinburgh, was the eldest son of the late Dr. James Gemmel, of Dunoon, Argyllshire, and graduated in medicine at the University of Glasgow in 1883. After acting as house physician in the Glasgow Royal Infirmary, he became senior assistant medical officer of the county asylum, Lancaster, and later was appointed medical superintendent of the county asylum, Whittingham. On retiring from this post a few years ago he went to live in Edinburgh.

A CONGENITAL CASE OF KALA-AZAR.

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So far as we are aware no case of congenital kala-azar has ever been described in the literature of this disease. It is possible that such cases have occurred in India, but in an endemic area this is difficult, if not impossible, to prove.

Recently we have had the unique experience of seeing a case of an infant, born in England, of a mother suffering from kala-azar, which disease subsequently developed in the child. Before being able to say definitely that an infection is really congenital—e.g., occurring through the placenta—sources of possible fallacy have to be rigidly excluded. We believe that, in this individual case, all such sources have been eliminated.

History of Mother's Case.

Mrs. A., 33; born Isle of Man, lived in United Kingdom till 1916, when she married and went to India. She remained there—except for leaves home—living at various stations, until *June, 1925*, when she came to England, where she has resided since.

Previous Illnesses.—Measles, bronchitis, influenza, malaria in 1916, dengue September, 1924; no other illnesses.

Present Illness.—After her attack of dengue, which was acquired in Calcutta where she was living at the time, patient went to the hills near Darjeeling for a month. From there she returned to Calcutta to her home in Alipore and resumed her normal life. At Christmas, 1924, she got a cold, did not feel well, and noticed about this time that she was pregnant. Her ill-health continued, but she attributed this to the pregnancy. In March, 1925, she noticed a rise of temperature every evening to 100° or 101° F., and, on consulting a doctor, a heavy growth of *Bacillus coli* with much pus was found in her urine. Vaccine treatment and alkalis were given, the urine cleared, but the temperature remained above normal and her general condition got worse. Blood examinations were negative for malaria, and the serum did not agglutinate any of the typhoid group. A blood count showed her white corpuscles only to be 2000 and her spleen was found to be enlarged, three-quarters of an inch below the costal margin. She then consulted Dr. Napier, who cultivated her blood for leishmania with negative results. No splenic puncture was made. She was then given quinine for seven days to see if this would have any effect upon her temperature, but as this failed entirely to influence the pyrexia, and as her condition was rapidly becoming grave she was given urea stibamine intravenously. In all five injections of this were given (0·4 g. in toto), and then, the temperature having subsided and the symptoms having greatly improved, she was sent home to England, where she arrived on June 10th, 1925. She went into a nursing home in Manchester 14 days after arrival as the symptoms had recurred, and there she was given three further intravenous injections of urea stibamine. Improvement again took place and she left the nursing home. She returned there later for her confinement and her child was born on *Sept. 12th, 1925*. After this she began to fail in health again, fever recurred, and eight weeks after the confinement the condition became alarming. She was then sent to the Hospital for Tropical Diseases where she came under our care on *Nov. 6th, 1925*.

Condition on Admission.—Patient was very ill. There had been considerable loss of weight, a high remitting fever was present, and the abdomen was filled with a large spleen coming down four inches below the left costal margin. A blood count showed red cells 2,600,000, white cells 1800, hæmoglobin 60 per cent. There was considerable poikilocytosis; no nucleated red blood corpuscles were seen, and no malarial parasites. As the heart sounds were very feeble and the pulse weak and irregular, strophanthus was prescribed. As there was no doubt as to the diagnosis, no splenic or liver puncture was made. On Nov. 9th stibosan (von Heyden "471") was commenced in doses of 0·1 g. intravenously, this being increased at the next injection to 0·2 g. and then continued at this dose every third day. Response was good, the temperature being lower at the end of the first week and then gradually settling to practically normal in the third week. The general condition also improved; the spleen went down and she began to put on weight. Four grammes of stibosan, in toto, were administered, and the patient left the hospital to all intents and purposes cured on Feb. 2nd, 1926.

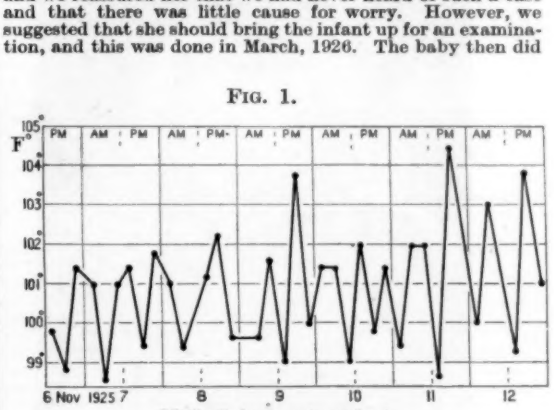
History of Pregnancies.—Children two, the first baby being born in England before she went to India. She became pregnant for the second time in India in December, 1925 (last menstrual period Nov. 28th), and went on to full term, the child—the one under discussion—being born in Manchester on Sept. 12th, 1925. Though suffering from kala-azar all the time, the pregnancy went on normally and no untoward symptoms appeared. No history of miscarriages or premature births or anything of gynæcological interest could be elicited in her case.

History of the Child's Case.

F. C. A., male. Weight at birth 7 lb. Confinement normal, no instruments used, slight tear of perineum necessitating two stitches. Never suckled or nursed by mother, but kept in room apart in nursing home, and subsequently taken care of by a nurse of its own for the two months before mother came into hospital, as she was too ill to look after it herself. For the first fortnight after birth did well, and then had a convulsion and was poorly for a week and never picked up properly after that. About seven weeks later started with bad diarrhœa and pain, and was then put into a nursing home in Exeter, where the mother was then staying, under Dr. C. E. Stokes.

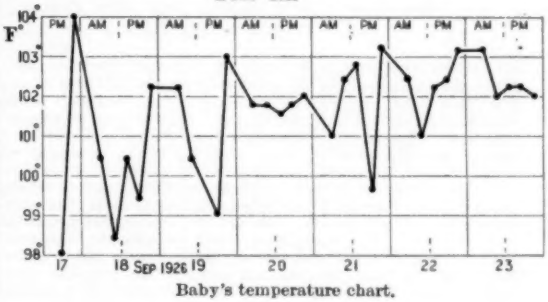
It was at this time that the symptoms of the disease recurred in the mother and she left the baby and came up to the Hospital for Tropical Diseases as described above. On leaving hospital on Feb. 2nd, 1926, the mother asked if there could be any chance of the baby acquiring the disease, and we reassured her that we had never heard of such a case and that there was little cause for worry. However, we suggested that she should bring the infant up for an examination, and this was done in March, 1926. The baby then did not look very strong and had rather a pasty appearance, but as there was no enlargement of the spleen specially noted, we just told the mother to let us know if any further developments took place.

FIG. 1.



Mother's temperature chart.

FIG. 1A.



Baby's temperature chart.

During the summer of 1926 the mother noted that the child was not well, but as some teeth were coming at the time, she thought the clinical symptoms were due to these. Towards the end of August no improvement having taken place and, as the abdomen was now becoming very prominent, the mother became alarmed and finally brought the child up to London to us for another examination on Sept. 17th, 1926.

Examination.—A glance practically showed the diagnosis. There was marked anæmia, emaciation, and a protuberant

abdomen, due to an enormously enlarged spleen well down below the umbilicus. In addition to this there was a high temperature of a remitting nature. The blood count was as follows: R.B.C., 1,600,000; W.B.C., 2600; hæmoglobin, 30 per cent.; poikilocytosis and nucleated red cells.

We got Dr. C. M. Wenyon to see the case, and on Sept. 20th one of us (G. C. L.) put a needle into the spleen and aspirated some of the juice. Smears made from this revealed quite numerous Leishman-Donovan bodies. The diagnosis made clinically was thus confirmed microscopically and it was evident that the child had kala-azar.

Treatment.—The difficulty and risk of giving such a debilitated infant of this immature age intravenous injections of antimony had to be faced. In view of this we consulted the literature and, finding that Dr. Napier, of Calcutta, had written an article dealing with intramuscular injections of antimony preparations (*Indian Medical Gazette*, October, 1925), we thought it advisable to adopt his method. Accordingly stibosan (von Heyden "471") was given intramuscularly into the buttocks, starting with 0·025 g. and increasing up to 0·075 g. every third day. No bad results followed these, and only on one occasion did there seem to be pain and tenderness afterwards at the site of injection. The response, though not immediate, was ultimately good. The temperature fell to normal; the weight increased, and the blood picture improved. There is every hope that an ultimate cure will result. We propose giving, following Dr. Napier again, 1 g. or even up to 1·59 g. in toto.

FIG. 2.

Photograph of baby on Oct. 19th, 1926, after having had 0·7 g. stibosan.

Discussion as to Mode of Infection of Child.

1. In the transmission of kala-azar an infected person appears to be essential. 2. There is strong evidence that the disease cannot be spread without the aid of an intermediate host, which is probably a blood-feeder, most probably of the genus *Phlebotomus*, or the genus *Culicoides*, and recently considerable evidence has been advanced that a sandfly, *Phlebotomus argentipes*, is the transmitter of the causative organism. Other insects such as fleas, lice, bugs, ticks, mites, and mosquitoes have all been suspected without much supporting evidence. 3. The preponderating mass of evidence is incompatible with the suggestion that the disease can be spread directly from man to man, or even indirectly by such media as water and milk, &c., while there is an increasing improbability that infection can follow ingestion of the parasite.

Bearing these facts in mind many questions that arise in the case under discussion can be answered. The source of the child's infection, occurring as it did in England, was undoubtedly the mother. The question of the intermediate host can also appear to be eliminated. At the confinement, conducted in a nursing home with a doctor and trained nurse present, ordinary precautions would be observed. The subsequent care of the child in a separate room, with a nurse of its own, and only occasionally in the presence of its mother, owing to her weak condition—both in the home at Manchester and for the short period subsequently before the mother came to the Hospital for Tropical Diseases—and living as they were under ordinary English conditions, rules the possibility of an intermediate host out.

Other Means of Infection at the Birth.—Infection by intestinal discharges; Mackie has been unable to demonstrate such a path of infection, and it is not supported in the report of the Kala-azar Commission, India, 1924–25. Besides, with a properly conducted labour, as this one was, this should be entirely obviated. As regards any possibility of infection during the second and third stages of labour, it may be noted that the mother had slight leucorrhœa for the last few weeks of pregnancy. The labour was normal, no instrumental interference being required, but the perineum subsequently had to be stitched. There were no abrasions upon the body of the child and the cord was tied in the usual way between double ligatures. While admitting the outside possibility of infection during this short period from the perineal hæmorrhage—if this actually did occur—or from the leucorrhœa, the ascertained evidence appears all against such a happening. There were no signs macroscopically of disease in the placenta, but unfortunately the organ was not kept. The mother did not suckle the child, so this avenue of infection can be excluded, and though she kissed the baby occasionally there is no evidence that this can transmit the disease; it is most improbable that it should. The probability of infection from association with the mother after her return from the Hospital for Tropical Diseases can be ignored, because the mother left the institution apparently cured and has remained in perfectly good health since, with no signs of any return of the malady.

The period that elapsed from birth before the appearance of symptoms in the infant is not incompatible with a placental infection. It is just possible that the injections of urea stibamine, given to the mother while she was carrying the fœtus, may have been beneficial to the latter. When the symptoms really did appear after the birth is uncertain. The incubation time for kala-azar is not definitely known, but periods of 10 or 12 months before symptoms become marked are not unusual.

Taking all these facts into consideration, it would appear that in this case the disease was congenital—i.e., conveyed through the placenta. This is very interesting as *Leishmania donovani* is chiefly a cellular parasite. It is however found in the blood stream in the leucocytes, and this is how the intermediate host must acquire the infection. As the blood in the placental vessels is only separated from the maternal blood by a thin intervening membrane the infecting parasites must have passed into the fœtal circulation in this way and so infected the infant.

In view of the extreme interest of this case we should like to suggest to practitioners in India that, if they have similar cases of kala-azar mothers being pregnant, the placenta be submitted for careful microscopical observations. It is quite possible that congenital infection of kala-azar is a not uncommon occurrence in the endemic areas of the disease.

Note.—Just as our paper was going to press Mrs. A., the mother, complained of feeling slightly feverish at night, so we re-examined her and, finding that the spleen had increased in size and that the leucocytes had

gone down in numbers, we thought it advisable to do a splenic puncture. This was positive, plenty of Leishman-Donovan bodies being present in the film. The mother has therefore relapsed. This, then, raises again the question of the possibility of direct contact infection of the child from the mother, but as already stated, all the evidence is against the possibility of such a mode of infection.

ULTRA-VIOLET RADIATION.

SOME ILLUSTRATIVE CASES.

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THE therapeutic value of ultra-violet radiation is now so firmly established that a mere record of cases which have benefited by it does not justify publication. A study of the seven cases dealt with in this communication, however, reveals certain special points in the administration of ultra-violet light and constitutes our justification for recording the cases. Cases 1 and 2 would appear to us to offer evidence of the value of local combined with general treatment. How the local application acts it is difficult to understand, but the whole question of the manner in which ultra-violet radiation brings about its beneficial results in suitable cases is at present a matter of conjecture. The penetrative powers of the rays of the Kromayer lamp are very slight, and, although bactericidal to some extent, their action in this respect is so superficial that it can hardly be by such means that they produce their therapeutic effect.

From an experience of a large number of cases, of which Cases 1 and 2 are examples, there appears to us very little doubt that local treatment, when combined with general exposure, plays a very important part in the relief of certain conditions. Case 4 is chiefly of interest in that the symptoms of a condition of a very obscure nature were considerably relieved by ultra-violet radiation. The treatment was entirely empirical, but, where diagnosis is doubtful, treatment must of necessity be empirical.

Clinical Records.

CASE 1.—Male, aged 51, suffering from widespread genital tuberculosis, involving the epididymides, prostate, and vesicles. A prostatic abscess developed, which threatened to burst into the rectum. Mr. J. Alban Andrews evacuated the abscess and removed the remains of the tuberculous prostate by dissection. In July, 1925, a bilateral epididymectomy was performed. A month later the patient was discharged from hospital. His general condition was good, but urine was leaking from a persistent suprapubic fistula, which was to be repaired later.

The patient was readmitted in October, 1925, the fistula was excised, and the abdominal wall repaired. The great amount of perivesical scar tissue rendered mobilisation of the bladder difficult, so that the space immediately behind the symphysis pubis could not be completely obliterated. This was drained. Three days later an abscess developed and discharged through the lower end of the suprapubic wound. Again a suprapubic fistula was established, although there was no urethral obstruction. Urine contained pus in large amounts.

When first seen on Dec. 10th, 1925, both seminal vesicles were hard and clinically tuberculous. There were two suprapubic fistulæ, from which urine leaked. They were surrounded by dense scar tissue, and the lower one was depressed below the surface. Over these the patient was wearing pads of wool, which had frequently to be changed, and there had been no alteration as regards this since the operation.

Treatment by ultra-violet radiation was begun on Dec. 10th, 1925, daily at first, and, later, with a few days interval. General treatment by the mercury-vapour air-cooled lamp was given on the first nine occasions, with exposures varying from 2 to 20 minutes at a distance of 36 inches. Local treatment was given by means of the Kromayer water-cooled lamp, short contact exposures being made with a quartz rod or quartz lens to the fistulæ. In all, 28 treatments were given over a period of 13 weeks, the later general treatments alternating between the air-cooled mercury-vapour lamp and the long flame carbon arc lamp. From time to time local treatment was given to the whole area of scar tissue by the tungsten arc lamp.

The fistulæ have now closed, the patient has put on over a stone in weight, and has returned to his work as a blacksmith. It was found necessary from time to time to give local treatment, as, if this was suspended, there was a tendency for the condition to become stationary. After each local treatment there was a definite diminution in leakage after a temporary increase lasting about 24 hours.

This case seems to demonstrate clearly that the local treatment played a very important part in the cure.

CASE 2.—Male, aged 45. Had a chronic discharging fistula of the thorax for three years, the result of an empyema following pneumonia in 1923. Occasionally the discharge ceased for a day or two, but always returned. Three operations had been performed with the object of closing the sinus, but without success.

When referred to us the patient had a sinus at the level of the eighth rib. From this sinus there was a profuse discharge of foul-smelling pus. The patient's general condition was poor and his appearance "septic."

Examination of chest showed impaired percussion note with diminished voice conduction, and weak breath sounds over the base of left lung.

Treatment began on March 23rd, 1926. Twenty exposures were given to the mercury-vapour air-cooled lamp and the long flame carbon arc lamp. In addition, local treatment with the Kromayer lamp was given to the chest wall in the region of the sinus, the rays being conducted along the sinus by means of a fine quartz rod inserted therein. An intense local reaction was aimed at and produced. The discharge ceased after five treatments and the sinus healed rapidly. There was also definite improvement in the general condition. Treatment continued at intervals until May 25th, 1926. A subsequent X ray examination showed evidence of thickened pleura, but no fluid in chest.

The sinus is now closed and completely healed. There has been no discharge for over six months.

CASE 3.—Male, aged 26. Hodgkin's disease. In January, 1924, patient complained of general weakness and loss of weight, and an enlarged gland was found in the left axilla and old shotty glands on both sides of neck. He went to Leysin under Dr. Rollier for the remainder of that winter. In July, 1924, some tender glands were observed on left side of neck. A white cell count showed a leucocytosis of 18,000 with 3 per cent. of eosinophils. Later, the white count increased to 20,300. No pyrexia. The following winter was again spent at Leysin, and on his return in June, 1925, a gland was removed which microscopically revealed changes typical of Hodgkin's disease. At this date another group of glands had arisen on the right side of neck. These visits to Leysin had benefited him very considerably. In November, 1925, it was decided that instead of going to Leysin, the patient should have a course of ultra-violet radiation.

At this time enlarged glands could be felt on right side of neck, axilla, both groins, and one in the right iliac fossa. Spleen and liver not felt. Mucous membranes pale. Patient complained of feeling "run down." Blood count was as follows: red cells, 4,400,000; white cells, 21,000; hæmoglobin, 81 per cent.; colour-index, 0·9. Differential count (per cent.): polymorphs, 77·66; lymphocytes, 5·66; large mononuclears, 7·0; eosinophils, 9·0; basophils, 0·66; so that the picture was one of a slight degree of secondary anæmia with a considerable leucocytosis and marked eosinophilia. Treatment was begun on Nov. 20th, 1925. In all, 19 treatments were given with either the mercury-vapour air-cooled lamp or the carbon arc lamp, with exposures starting at five minutes and increasing up to 25 minutes at 36 inches distance.

Blood counts were done as follows:

Further blood counts.	28/11/25.	6/12/25.	2/1/26.
Red cells	4,400,000	4,500,000	4,640,000
White cells ..	13,000	14,640	10,430
Hæmoglobin ..	86%	91%	91%
Colour-index ..	0·97	1·0	1·0

Differential count (per cent.) on Jan. 2nd, 1926: polymorphs, 79·5; lymphocytes, 11·0; large mononuclears, 6·0; eosinophils, 2·5; basophils, 1·0.

Even allowing for the well-known fluctuations that occur in this disease, especially as regards the white cells, it would appear that there was an improvement in the blood condition

during treatment. There was a definite rise in the hæmoglobin content, and an even more definite drop in the white cell count and in the percentage of eosinophils, so that the actual number of eosinophils circulating in the blood was very markedly decreased. During the treatment the enlarged glands diminished in size and no fresh enlargement of glands appeared. The temperature taken before and after each exposure showed no pyrexia throughout. The patient himself stated that he felt much benefited, and that the effect on his subjective symptoms was comparable with that experienced on his previous visits to Leysin.

The results in this case would suggest that the artificial, no less than the natural, sunlight has a therapeutic value in alleviating the symptoms and retarding the progress of Hodgkin's disease.

CASE 4.—Male, aged 27. A case of an obscure character which appeared to be an arteritis of some sort. He complained of pain and swelling in the toes and foot on the left side, and inability to place the foot flat on the ground without discomfort, so that he walked on the outer side of the foot. On inspection the toes and foot were observed to be somewhat swollen, cold, and cyanosed. Movements of all joints full and free. Seven years previously a similar condition was present in the other leg, and the right calf now measured half an inch less than the left, owing to subsequent wasting of the muscles on the right side. Wassermann reaction was negative.

Treatment by ultra-violet radiation was begun on Jan. 25th, 1926, and consisted in general baths with the mercury-vapour air-cooled lamp and carbon arc lamp, with local treatment to the foot with the former. Fourteen general and six local treatments were given over a period of four weeks, at the end of which time the coldness, swelling, and cyanosis of the foot had disappeared. The patient was able to put the foot flat on the ground without discomfort, and the pain which prior to treatment had been severe, especially first thing in the morning, was no longer present.

CASE 5.—Male, aged 36. Severe acne of chest, abdomen, and back of 20 years' standing. General baths with the mercury-vapour air-cooled lamp and carbon arc lamp were given, and after ten exposures the condition had almost completely cleared up with the exception of a few larger pustules, to which it was necessary to apply the Kromayer lamp with a quartz rod on two subsequent occasions.

CASE 6.—Severe acne of the face in a girl aged 16. General exposures were given as in the previous case, and local treatment was also given to the face with the tungsten arc lamp and the Kromayer lamp to individual pustules. For the first 10 or 15 treatments very little improvement was observed, but later this became definite, though slow. In all, 35 treatments were given, and at the end of this time the skin was clear and the scars of previous pustules scarcely noticeable.

Cases 5 and 6 were examples of severe degrees of acne. In our experience, ultra-violet radiation is of the greatest value in the treatment of this condition. There is considerable variation, however, in the readiness with which such cases respond to it. The first case was an example of a large group in which the response is almost immediate and in which the condition clears up very rapidly; the latter was an example of a smaller group in which the condition is refractory and requires prolonged treatment, but the results are ultimately good.

CASE 7.—Female, single, aged 32. Debilitated, pale, and listless. Bouts of indigestion of colonic type. Anorexia nervosa. Catamenia absent for ten months.

Treatment began March 26th, 1926, with general exposures, and was continued until 17 had been given up to May 3rd. On March 29th a scanty flow started, rusty in appearance, lasting four days. On April 5th a flow began lasting five days, and of a more normal appearance and quantity. On April 27th a six days' flow, practically normal. Treatment was suspended from May 3rd to May 17th, when three more exposures were given before the period was due. The period began on May 28th, lasted seven days, and was quite normal There is no indigestion, appetite is normal, and all subjective symptoms have disappeared.

This re-establishment of menstrual function, erratic at first but becoming normal in eight weeks after a complete cessation for ten months, seems to justify the treatment of functional abnormalities of ovarian or uterine activity by ultra-violet radiation.

We wish to record our indebtedness to Sir Thomas Horder and Mr. J. Alban Andrews for permission to publish accounts of those of the above cases which they sent to us for inclusion in this paper.

VENTRICULAR PUNCTURE IN APOPLEXY,

WITH REMARKS ON THE TECHNIQUE AND USES OF THE OPERATION.

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As a cerebral hæmorrhage of any but the smallest magnitude is a fatal condition, any method of attack which offers a prospect of relief is worth trial. The following brief preliminary note is of a procedure in apoplexy which I have not seen described.

A Case Related.

A man, aged 50, suffered from headache for a few hours. At 2 P.M. on Jan. 8th, 1926, he was taken ill suddenly at his work and was admitted forthwith to Westminster Hospital. He remained conscious until 4 P.M., vomiting several times. When I saw him at 5 P.M. he was unconscious, and showed a complete left-sided flaccid hemiplegia. The right upper limb was in active movement, the man pressing his hand against the right side of his head. The eyes squinted divergently. The pupils were small and inactive to light. The tendon jerks were exaggerated bilaterally, and there was clonus at both ankles. The left plantar response was extensor in type, the right flexor. The clinical diagnosis of apoplexy was confirmed by immediate lumbar puncture, which showed the cerebro-spinal fluid intimately mixed with blood, but not under an excessive pressure. The pulse-rate was 80 per minute. We considered that the hæmorrhage had already passed across from the right to the left side of the brain.

At 6 P.M., with the assistance of my house physician, Dr. H. A. Dunlop, I punctured the right lateral cerebral ventricle by means of a drill and needle. Hæmorrhagic cerebro-spinal fluid at once escaped, but the flow was slow. When the patient's head was allowed to fall downwards and backwards over the end of the bed, the flow—by gravity—was at once somewhat increased, and a still better flow was obtained by digital compression of the jugular veins. The patient vomited frequently, and there was copious double incontinence. A small syringe, used gently, was filled several times by suction of the ventricular contents. About 10 c.cm. were withdrawn. At 7 P.M. the pulse-rate was 60. The condition of the pupils and reflexes was unchanged, and although there was now more profound unconsciousness, the man's right hand was as before passed frequently to the right side of his head. The operation was successfully performed, but the result was negligible. Death occurred at 1 A.M. At the autopsy Dr. Braxton Hicks was unable to assign any special cause for the hæmorrhage. The heart, kidneys and arteries, general and cerebral, were healthy for the age of the patient. The right ventricle was occupied by an extensive clotted hæmorrhage which had destroyed the brain and which had passed in part into the left ventricle and, as has already been indicated, into the smaller ventricles and spinal subarachnoid space. The spot where the needle had pierced the brain en route to the ventricle was adjacent to a large cortical blood-vessel.

Technique of Puncture.

My knowledge of the operation of ventricular puncture in adults has been obtained chiefly from my colleague, Sir James Purves-Stewart (see his paper in THE LANCET, Dec. 5th, 1925). I have performed it a dozen times. I have found, however, that for a right-handed operator an ordinary right-handed multiplying action drill, with a handle on the left side and with a corkscrew groove in the drill, is quite satisfactory. If a very small puncture wound is desired, as usually is the case, the drill should be the smallest which is larger than the fine lumbar puncture needle to be used. The only difficulty with the drill I describe is that of finding the bony tunnel with the needle after the drill has been withdrawn, but, if a skilled assistant keeps the scalp firmly fixed to the skull, this is inconsiderable. When an area of the scalp had been properly shaved and carefully washed, the site of the proposed puncture, in the case of a conscious patient, is sprayed with ethyl chloride. The operative risk of septic meningitis is a definite one. When the operation is completed, a wooden match, whittled down and carrying pure carbolic acid, is inserted into the wound for a moment. I have the match ready at the outset for possible use as a plug

in case of bleeding from the bone, but I have not had occasion to make use of it. It does not appear to matter if by mischance the drill point is apparently carried by the weight of the body through the dura mater, but the risk of cortical hæmorrhage must be considerable in such an event. Perhaps the dura mater is pushed in front of the drill point. Whether the meninges are pierced or displaced, the conscious patient feels no pain at this or any time. None of my patients have had either pain or shock, immediate or later on. They may hear the movement of the drill unless their ears have been plugged, but they feel nothing unpleasant. They make neither sound nor movement. In the case of a man suffering from severe acromegaly, notably of the skull, the operation was completed and the cerebro-spinal fluid withdrawn before he appreciated that it had commenced. In addition to the risk of meningitis, a definite danger of ventricle puncture is perforation of a blood-vessel lying on the surface of the brain. I have heard of a case in which extensive subarachnoid cerebral hæmorrhage occurred from this accident, and it appears that neither anatomical knowledge nor operative skill can prevent it in a proportion of cases. Our safeguard is to be certain that the drill point passes no further than through the inner table, and to be certain also that the needle point is guarded accurately by its stilette until it has passed, at any rate, beyond the surface of the brain. But, operating by touch alone, it is not easy to be certain of these things. In some cases, especially when one or both ventricles have been displaced laterally, it may be the contra-lateral ventricle which is penetrated by the needle.

Results of Puncture.

The relief of headache, afforded by ventricular puncture to a patient with internal hydrocephalus, from whatever cause, is dramatic. In cases of apoplexy the pain which often is demonstrably present on the side of the head where the bleeding is taking place, may be due to the result of internal hydrocephalus. To some extent any increase of subarachnoid pressure in apoplexy may be lessened by withdrawing the bloody cerebro-spinal fluid from the cistern or lumbar region. Unconsciousness in apoplexy is caused no doubt in the main by destruction of the brain by the pressure of the collection of blood. Whether unconsciousness can be prevented or relieved by ventricular puncture at a very early stage of the hæmorrhage, remains to be proved. I know that during life blood within the cerebral and spinal subarachnoid spaces may clot, but I do not know whether blood within the ventricles during life clots rapidly or slowly, or if it clots there during life at all. Perhaps aspiration of the fluid contents of the ventricle would encourage the ruptured vessel to bleed more than ever, but the escape of the blood by gravity through the ventricular puncture needle might be beneficial. Perhaps also, in an early stage of bleeding, the affected ventricle might with advantage be gently filled with hæmostatic serum introduced through the ventricular needle, the subarachnoid pressure being controlled, if thought necessary, by simultaneous cistern or lumbar puncture, or both. With a needle of wide bore, venepuncture may be performed at the same time for the purpose of reducing blood pressure. A possible difficulty in introducing serum with the technique I describe, might be that of keeping the needle point stationary in its longitudinal axis within the ventricle during the fixing of syringe or tubing.

The clinical diagnosis of suspected apoplexy may be proved in most cases by the visible examination of cerebro-spinal fluid withdrawn by whatever route. Therapeutics apart, diagnosis depends on this ready proof and demands it. The diagnostic difficulties between supposed cerebral hæmorrhage and coma from—e.g., suspected opium poisoning, of which we hear the accounts, would no longer occur if this method of proof were universally practised. Some years ago, during a ward round, a man whom I had just described as a likely candidate for a cerebral hæmorrhage became suddenly unconscious while I was at another bed-side in his ward. Lumbar puncture within the first two minutes withdrew a colourless cerebro-spinal fluid. Lumbar puncture five minutes later revealed the hæmorrhage and clinched the clinical diagnosis.

The cistern route is now frequently employed for therapeutic and diagnostic injection, and for the relief of headache in cases of cervical subarachnoid block; and in several cases of meningitis I have washed the spinal subarachnoid space from the lumbar sac to the cistern. I have not yet injected antisera, syphilitic or otherwise, by the ventricular route. I have had one case, however, in which we demonstrated the use of ventricular puncture in affording an exit for fluid during lavage of the spinal and cerebral subarachnoid space conducted from the lumbar region. The patient was admitted with suppurative meningitis, which had developed apparently from infected skull sinuses. Lavage with saline was employed as described. The purulent fluid, which escaped slowly from the ventricular needle, became gradually colourless during the operation. The lavage did no harm, from the clinical point of view at any rate, but death occurred in due course from the meningitis. Autopsy showed that the convex surface of the brain on the side subjected to ventricular puncture was free from visible meningitis. The opposite cortex, on the other hand, was covered with purulent exudate.

Clinical and Laboratory Notes.

A CASE ILLUSTRATING THE AFTER-EFFECTS OF POISON GAS.

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THE immediate action on the lungs of poison gases, especially chlorine and phosgene, has been studied close to the field of battle, but the after-effects of this weapon are only vaguely known. Though many ex-soldiers have died, post-mortem examinations have been made relatively seldom. The records of the following case are incomplete, because, through a misunderstanding, the lungs were not kept for microscopic examination; but the macroscopic appearances were so definite as to justify publication. For the previous history of the case I am indebted to the Director-General of Medical Services, Ministry of Pensions, and to the Board of Pension Commissioners of Canada, both of whom have placed all their available information at my disposal.

Clinical History.

The patient, a Canadian, was gassed at St. Julien about April 23rd, 1915, during one of the first gas attacks in the second battle of Ypres, so that his condition was probably due to pure chlorine. He developed a bad cough and frothy sputum, but did not go sick till May 24th, after a second gassing at Festubert. He was rapidly transferred to Le Havre and thence to England. At this time he had a great feeling of distress about the throat and left chest, with dyspnœa, severe cough, and copious sputum. A month later the eyes were still very engorged, the cough had nearly ceased, the area of cardiac dullness was decreased, and there was poor chest expansion and air entry, especially on the left side, with a few rhonchi. The note was made: "Probably some old broncho-pneumonic condition left side," and he was described as looking 30, although 41 years of age.

By Sept. 16th his condition and personal comfort had very much improved, though there were rhonchi and shortness of breath. A medical board, in October, 1915, found: "Small expansion of lungs, breathlessness on exertion with pains over chest; some parts show large dry râles and other parts intensified breath sounds. Has been steadily losing flesh." Otherwise their extensive examinations (of urine, blood, &c.) were negative. The board recommended his discharge as permanently unfit, and on his return to Canada

another board discovered "suspicious signs of softening at right apex," gave him a 50 per cent. disability pension, and sent him for observation. No evidence of tuberculosis was found.

There is no record until 1917, when he had apparently returned to England. He was then described as very short of breath, and the word asthma was used. He was thereafter examined every year in London and noted as having chronic bronchitis and emphysema with steadily increasing shortness of breath. About 1921 he appears to have first mentioned general nervousness, and a neurological board found a mild degree of anxiety neurosis. Apparently he never saw a special *medical* board, but in 1924 he was sent to the tuberculosis officer of a reputable London chest hospital, who found bronchitis with no evidence of tuberculosis. In 1925, at the same hospital, an acting tuberculosis officer found "pulmonary tuberculosis, slowly active," and this put his assessment up to a much higher level—not, I should think, unjustly. Subsequent boards, and another tuberculosis officer, recorded their inability to find tuberculosis, but the diagnosis stuck and did more good than harm.

A board in February, 1926, made a statement to this effect: "Weight 109 lb. (120 lb. on enlistment). A barrel-shaped chest, marked bronchitis all over. Pensioner states œdema at times, none now. Pulse 90, with poor exercise tolerance." They gave him 80 per cent. of disability and could find no sign of tuberculosis.

Recent Condition and Findings at Autopsy.

He was admitted to St. George's Hospital in April, 1926, and was then a cyanosed man, looking several years more than his age, with marked œdema of both legs and the left arm, and slight clubbing of the fingers. The apex of the heart was one inch outside the nipple line and the beat was very irregular with numerous extrasystoles. His blood pressure was 140–190, and his vital capacity 63 per cent. below normal. He had a round emphysematous chest with poor but equal expansion. There was dullness over the lower half of the right lung behind, with rhonchi and sibili all over both lungs—so loud and persistent that it was impossible to describe his breath sounds. Urine was very scanty with a fair amount of protein. The deposit contained red cells, pus, and granular casts. No organism was found in the urine nor any tubercle bacilli in the sputum. The Wassermann reaction was negative.

After a week in hospital the amount of urine had increased to about 40 oz. per day, and it contained nothing abnormal; after a month he was greatly improved in every way, and was getting up and about. His chest was nearly clear of rhonchi, except at the right base where the dullness with loss of vocal resonance persisted. His heart was normal in size, but still showed an occasional extrasystole.

On June 3rd, however, he complained of pain in the left side and his temperature rose to 102° F. The next day the classical signs of broncho-pneumonia were present in the left lower lobe. He became very feeble, blue, and dyspnœic, and on June 8th complained of pain in the right side, though no certain signs beyond numerous moist râles mixed with the rhonchi were discernible. The next day he died rather suddenly in a fit of dyspnœa.

Post-mortem Examination.—All the organs appeared normal except the heart, which was flabby and friable, but without gross organic lesion; the kidneys, which were unusually flabby, but otherwise normal; the liver, which was congested; and the lungs. The left lung showed confluent broncho-pneumonia, mostly in the lower lobe. The whole lung, and especially the lower half, was much more water-logged than is usual in broncho-pneumonia. The pleura over the right lower lobe was very much thickened, and within the lobe were many small bronchiectatic cavities, the largest of which would have contained a hazel nut. The lung was by no means "honeycomb," and the cavities were separated by rather hard, congested lung tissue, with broncho-pneumonic patches. The whole lobe was water-logged and there was a confluent broncho-pneumonia in the middle lobe. Both upper lobes were congested, but not grossly diseased. There was no evidence of tuberculosis.

Discussion.

The man had no history of any previous disease. Taken together with the note by one of his early boards that he looked younger than his age, this makes it quite certain that the patchy bronchiectasis of one lobe must be attributed to lesions in the bronchi caused by the direct action of chlorine on them. The conclusion cannot be avoided that the intense inflammation of the whole respiratory tract following gassing, if it does clear up quickly enough to prevent the immediate death of the patient, may leave behind it a partial necrosis of the bronchial walls. These soft and weakened structures gradually dilate in the course of years. They form foci for the general pathogenic organisms of the lungs, and these cause more and more general bronchitis. Thus a vicious circle is formed, as the coughing tends more and more to dilate the bronchi.

The original lesion as noted a few weeks after his gassing pointed to the left side being chiefly affected; it was regarded as "possibly some old broncho-pneumonic condition." The patient's fatal broncho-pneumonia started on this side, and this may or may not have been accidental. The thickened pleura over the cavity area is rather curious, and it is still more curious that the dullness to percussion which it produced was not noted until I saw him, for it had certainly been there a long time. Some thickening of the pleura is not uncommon near such cavities, and many of these were near the surface of the lung. Whatever its cause, it very effectively blanketed any direct stethoscopic evidence of cavitation, even if the cavities were large enough to give any physical signs.

I have given the clinical picture at some length because it shows how difficult it is to make sure of the right diagnosis in these cases of bronchitis due to gassing. There can be no doubt that the cardiac dilatation and albuminuria were entirely secondary to the pulmonary condition. They came on comparatively suddenly, and disappeared so very rapidly under treatment as to leave no gross post-mortem evidence of their existence.

That bronchiectasis does follow gassing has been realised for some years. It is not yet obviously common, though it will become more common every year for the next ten years. Recently I have seen a man with early generalised bronchiectasis who is, and has been, regularly at work ever since demobilisation in 1919. He was gassed and has had increasing cough all the time. He is legally debarred from applying for a pension because it is more than seven years since he left the Army. The seven years' rule of the Royal Warrant will go very hardly with these cases, and this is a point to which a wise and benevolent Minister of Pensions might well direct his personal attention.

NARCOLEPSY AS A SYMPTOM OF ENCEPHALITIS LETHARGICA.

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IN a very interesting paper on narcolepsy, published in a recent number of *Brain*, and discussed in a leading article in THE LANCET, Nov. 13th, p. 1017, Dr. W. J. Adie has recorded a case in which the symptoms of this disorder first appeared after an attack of encephalitis lethargica. As at the time his paper was written he was able to find only one similar instance in the literature, I have thought the following case worth relating.

I was first consulted in the case of Mr. M., aged 20, by his relations, who told me that for some time past he had been subject to attacks in which he suddenly fell to the ground. These were of brief duration and came upon him at any time. There was said to be no loss of consciousness. He was a native of Iceland and living in his own country. He had seen many medical men there and in the Scandinavian capitals, and the diagnoses of epilepsy and hysteria had both been suggested.

I saw him in April, 1925, when there was no doubt whatever about the diagnosis of encephalitis lethargica. He presented the characteristic Parkinsonian facies, and his posture and gait, though less severely affected, were typical of the same condition. With this were associated bilateral ptosis and a blinking tic. There were otherwise no physical signs of disease.

His chief complaint was of insomnia. He said that on getting up at about 9 A.M. he became so sleepy that he had to go to bed again; he was at his best in the evening, seldom getting off to sleep until well on in the early hours of the morning.

The history elicited was that at Christmas, 1918, he had an ordinary mild attack of influenza, from which he com-

pletely recovered. In the summer of 1919 he began to have a tickling feeling in the epigastrium; it began when he laughed and it was "like being tickled." Then he began to complain of excessive sleepiness. Whenever he sat down in a chair he went to sleep. There followed a period, beginning with diplopia, in which he was delirious, had hallucinations of vision, and a "funny noise" in his ears. After this he noticed that *whenever he laughed or was excited he fell down.* Subsequently he found that his face was losing expression and that saliva would dribble from the corners of his mouth; he could not read, could not concentrate, and became shaky and like an old man. In these respects he began to improve about 1922 and he was thought to be still improving, but remained liable to the falling attacks.

While giving me his history he had what I noted at the time as an attack of petit mal. My note reads: "A little twitching of the facial muscles, short interval of silence, then talked vaguely in Icelandic; then said, 'I can't move my arm.'"

Dr. Adie describes narcolepsy as comprising two kinds of attack—

"attacks of irresistible sleep without apparent cause and curious attacks on emotion in which the muscles relax suddenly so that the victim sinks to the ground conscious but unable to move."

In the case which I have recorded, both forms of attack seem to have been present at different times in the course of a prolonged encephalitis lethargica, the attacks on emotion subsequently persisting. The early story of the sensation in the epigastrium as if he were being tickled, which occurred whenever he laughed, must surely be regarded as premonitory of the complete attacks. The attack which I witnessed and which I took to be epileptic may not have been so, but raises again the relationship of narcolepsy to epilepsy in which attacks on emotion may occur. Unfortunately, considerations of time and difficulties of language prevented me from investigating the case more fully.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF SURGERY.

AT a meeting of this Section held on Dec. 1st, under the presidency of Mr. V. WARREN LOW, a discussion on the

TREATMENT OF GANGRENE OF THE EXTREMITIES

was opened by Prof. G. E. GASK. The subject of gangrene, he said, was so vast that he would limit his remarks to a consideration of the right treatment of an elderly patient with stiff arteries and threatening gangrene of the extremities. Conservative measures and amputation were admittedly unsatisfactory. He would try to assess the value of periarterial sympathectomy. Blood-vessels owed their tone to the property of unstriped muscle-fibre to be in a state of tonus and to the continuous vaso-constrictor impulses received; additional factors were the response to epinephrin and to the stretching force exerted by the contained blood. By modifying the vaso-constrictor impulses it was hoped to change the calibre of the vessels supplying the gangrenous part. Vasomotor nerve-fibrils, afferent and efferent, were present in the adventitia, and the aim in periarterial sympathectomy was to divide the efferent sympathetic fibres and so abolish control over the distal part of the vessel.

Periarterial sympathectomy in animals was followed by increased temperature or increased flow of blood to the distal portion of the limb. What happened when it was carried out on the human subject? It was first suggested by Jaboulay, of Lyons, who tried it in 1899 for perforating ulcers of the foot, and Leriche brought it into prominence for gangrene. It had also been carried out for thrombo-angeitis obliterans, Raynaud's disease, arterio-sclerotic gangrene, and even for such conditions as ununited fractures, osteomyelitis, and female pelvic disturbances. The first patient on whom Prof. Gask had performed the operation was a Russian Jew, aged 34, who gave a three years' history of pain and swelling in one leg, the blood-supply of that leg and foot being seriously impaired. While in bed both legs appeared to be normal, but when he got up and began to walk one leg became dark blue and very painful. It was generally thought that he had some obscure vascular lesion, such as erythromelalgia. For the operation a portion of the superficial femoral in Scarpa's triangle was selected, and the artery stripped of its adventitious coat for an inch. The artery at first appeared white and contracted, then the limb became warmer than its fellow; blueness and pain disappeared; the man returned to work, and was still well two years after the operation. In a second case he had partial success, while in two others no success was claimed, though the patients were no worse.

In regard to the assumption that sympathetic fibres passed to the periphery by the arteries, Prof. Gask quoted observations published in 1924 by J. N. Langley. After section of the posterior tibial nerve at the tendo Achillis, he found that stimulation of the lumbar sympathetic still caused complete pallor of the pad of the foot and the toes. Section, in addition, of the musculocutaneous nerve on the dorsum of the foot greatly reduced the pallor obtained. Additional section of the anterior nerves just above the ankle nearly abolished the effect of the sympathetic. The ganglia of the sympathetic chain sent fibres to the immediately adjoining arteries, and the peripheral arteries received small filaments at intervals from the nerves accompanying them. Langley suggested that the effect of the periarterial operation in abolishing vasoconstriction was due to some cause other than section of nerve-fibres going to the periphery in the arterial sheath, and that it might be due to section of afferent fibres.

On the whole, said Prof. Gask, the results of periarterial sympathectomy were unsatisfactory, though occasionally it met with astonishing success. In senile gangrene good results were not to be expected. There was a discrepancy between the experimental and the clinical findings, and further knowledge was required as to the distribution and function of the sympathetic fibres. If the operation had done nothing else, it had certainly broadened our knowledge of the sympathetic system. In actual or impending gangrene, should the leg be amputated, or should an attempt be made to save it by rest in bed, warmth, the application of desiccating powders, perhaps aided by sympathectomy? Though amputation might be called for in senile gangrene as a life-saving measure, it should, he thought, be staved off by every possible means.

Discussion.

Mr. W. SAMPSON HANDLEY thought Prof. Gask's desire to draw a cautious conclusion had led him to give less than its due to periarterial sympathectomy. He had himself only lost one case of senile gangrene. The operation he did, however, was not that now described, but the periarterial injection of alcohol.[1] He exposed the femoral artery in Hunter's canal, and injected, at four points in its circumference, two or three minims of absolute alcohol into the outer coat of the artery, using for the purpose a very fine hypodermic syringe. He regarded this as a great improvement on sympathectomy, chiefly because immediately after the latter a contraction of the artery ensued, and some 15 hours of low circulation preceded the onset of vasodilator symptoms, the latter lasting only three or four weeks. This period of low circulation might be very dangerous to a patient who had threatening gangrene. Moreover, injection succeeded is cases which were not amenable to sympathectomy. The alcohol injection method was the simpler operation, and its greatest field was preventive—for cases showing spots on the toes, coldness, and pallor of the feet, and pain. He agreed that

[1] THE LANCET, 1922, ii., 173.

anatomical differences in individual patients, such as variations in the level at which the vasoconstrictor nerves ran into the artery, might cause lack of uniformity in results. Langley seemed to have omitted the crucial experiment of injuring the outer coat of the artery in the dog used. Mr. Handley quoted some classical experiments carried out by Lord Lister in 1845, from which he deduced that the tone of the arteries of the lower extremities depended on the integrity of the lower half of the cord. Surgeons, he said, were at liberty to draw conclusions from their own clinical findings when these were at variance with the views of physiologists. He showed colour pictures of cases illustrating the stages in his alcohol-injection method, and giving the after-histories, which were very gratifying.

Mr. PHILIP TURNER said he had not done periarterial sympathectomy, but had treated four senile gangrene cases by the method described by Mr. Handley. The first, the most successful of his series, was that of a man aged 70, who was operated upon in February, 1924. The big toe was gangrenous, and over the whole of the foot was solid œdema, a considerable patch of apparent gangrene was at the base of the second and third toes, and another over the heads of the metatarsals in the middle of the sole of the foot. The gangrenous process had been going on three months, and there was great pain and tingling. When he exposed the femoral artery in Hunter's canal he felt very disappointed, as it was a firm, solid calcareous structure, in which no pulsation was evident. Still, he proceeded with the operation, injecting 10 minims of absolute alcohol through four punctures. After the injection a grey ring formed round the femoral artery; 24 hours afterwards the pain had gone, 48 hours later still the swelling had disappeared, and next day the patches on the sole and dorsum had practically vanished; a few days later the patient was walking about. The granulating area healed only slowly, but he did not use silver nitrate, as he feared a restarting of the gangrenous process. A year afterwards the man was walking about, the wound had healed and the pain gone, and there had been no recurrence. The next case was in a generally unsatisfactory condition when seen; diabetes, an enlarged liver, bronchitis, and emphysema were among his troubles. Following the injection of alcohol there was an improved condition, with increased temperature in the part, but only for a few days, death occurring 10 days after the operation. Death would probably have taken place whatever treatment might have been employed, or if none was carried out. He described his other cases, the result in which was moderate but not very long-lasting. He was in favour of the method, and intended to continue with it in those cases which appeared to be favourable for it. There was always the alternative of amputation if injection failed, and giving patients this chance served also to prepare their mind for the larger operation if it should be necessary. The engorgement with blood of the vessels concerned certainly was a very helpful factor. He did not think the physiological experiments Prof. Gask described could be held to negative the clinical results which could easily be observed, especially as it was evident that physiologists could not yet explain exactly what happened. He agreed with Prof. Gask that every effort should be made to stave off amputation, especially as amputation for senile gangrene showed a considerable mortality

Mr. C. H. S. FRANKAU referred to two cases of gangrene of the extremities which he had had. One was a Pole, aged 50, who had the arteries typical of that race. The speaker had operated on the patient's right leg six months previously. On his second visit he had intense pain in the left ankle and foot, which were mottled and evidently the seat of commencing gangrene. He kept the man in bed a month, trying the effect of radiant heat, diathermy, and other measures, none of which mitigated the condition appreciably. So intense was the pain that he had to be kept continually under the influence of morphia. Having read Mr. Sampson Handley's article, he, the speaker, exposed the superficial femoral artery at the apex of Scarpa's triangle, and found it to be completely blocked, pulsation being absent. Absolute alcohol was injected, and the improvement was as dramatic as in Mr. Turner's case; from that moment the pain ceasing, no morphia was given after the operation, and the man left the hospital a month later, walking with crutches on his one leg. His death took place six months later, from cerebral hæmorrhage, it having had no relation to the operation. He had two other cases, of the ordinary senile type. On one of them he did periarterial sympathectomy, on the other he carried out alcohol injection. In regard to them he could not use the term "success" nor "failure": there was no real change in the limb, and amputation was not carried out. His fourth case was a complete failure. The patient had dry diabetic gangrene, and amputation had been recommended by the physician. Sympathectomy was done instead, under local anæsthesia. The immediate result was a stoppage of the intense pain, but though efforts were made to keep the area dry, the dry gangrene became a moist one and spread rapidly, the end coming in a few days.

Mr. A. TUDOR EDWARDS spoke of two cases in which he did sympathectomy of the brachial artery for Raynaud's disease—of the finger in one case, of the foot in the other. In the first of these the operation was done nine months ago. The superficial slough separated in three weeks, eventually coming off like the finger of a glove. Three weeks later a skin graft was applied, with satisfactory result. In the other case the man had already had his left foot amputated two years before for Raynaud's disease. The artery was split in Hunter's canal, the pain disappeared immediately, and the wound granulated well, but in four months the old condition began to come back and amputation was necessary.

Mr. J. E. ADAMS drew attention to the value of ligature of the common femoral vein for the kind of condition under discussion. He had carried it out on several patients. He had found the technique of periarterial sympathectomy of the common femoral difficult, as one could not be sure of the depth to which one was going. It was necessary to be certain of getting the alcohol into the right plane. Two of the cases on which he did ligature of the common femoral vein were ordinary senile gangrene, the patients having no sugar in the urine; two had gangrene with glycosuria. In a senile case, aged 70, without sugar in the urine, in which ligation was done, pain ceased immediately, and two years later there was only slight discoloration. No swelling or œdema followed the operation. In another similar case the patient, a year after the procedure, was walking two miles in a day. In one of the diabetic cases ligation failed, and amputation had to be done in the usual way. In another case he did ligature of the common femoral vein and alcohol injection in the artery. That patient recovered from the gangrene, and the popliteal pulse, which had disappeared, returned. In a third case, ligation of the vein was not followed by any obvious improvement, and amputation was performed at the seat of election. He believed that if these cases could be seen early enough, there was a good deal of scope for surgery, short of amputation. Section of tissue removed should always follow.

Mr. E. G. SLESINGER said he had done periarterial sympathectomy 17 times (on eight patients). Two of the cases were straightforward Raynaud's disease in the upper limbs, and it was difficult for sleep to be procured on account of the intense pain. The axillary artery was chosen for the sympathectomy. He preferred this operation to that of alcohol injection. He agreed that tissue removed should always be carefully examined. Twice he had done the operation in frank thrombo-arteritis obliterans. It was possible that the condition being dealt with was capillary dilatation, not arterial dilatation. He would not do

it again in thrombo-arteritis obliterans, but in the other cases he had been favourably impressed with the operation.

Mr. C. MAX PAGE said the operation of sympathectomy certainly relieved the subjective symptoms. He agreed with Mr. Slesinger as to the extraordinary variety in the appearance of the artery in different people when it was exposed. It was likely that the operation would be done increasingly in the near future, therefore it was of great importance that as much knowledge as possible should be obtained as to the arterial disease and the circulatory conditions present, examinations being made of middle-sized arteries in the immediate neighbourhood, with blood-pressure readings.

Mr. J. PATERSON ROSS said the suggestion had been made that the nerve-fibres stripped from the vessel in the so-called periarterial sympathectomy might be of afferent nature, not efferent. He showed a coloured diagram to explain the point. The muscle in arteries was believed to be in a state of tonus, and it was similar to that in striped muscle. The tone of striped muscle depended somewhat on the reflex arc, the afferent fibre of which started in the muscle, passed in by the posterior nerve root, and formed a synapsis in the cord, thence passing back to the muscle itself. There was evidence that that was the afferent track, because section of posterior nerve roots lowered the muscle tone, and that had been used for many years in the treatment of spastic states. Some afferent fibres passed from the blood-vessels to the cord, some perhaps carrying sensation, others serving the protopathic sense. When, therefore, an afferent nerve was cut, so interrupting the reflex arc, it was possible for the tonal effect of the vasoconstrictor nerves to be interfered with. Probably it was in the periphery that the vaso-constrictor fibres exerted their chief effect, and the varying character of the results obtained in senile gangrene might be attributable to the pathological changes in the different parts of the vessels.

Dr. PARKES WEBER said the symptoms indicating that gangrene threatened were: first, intermittent claudication in elderly people—a feeling of cramp and tiredness after walking a short distance; secondly, failure to detect pulsation in the dorsalis pedis artery, with coldness and a purplish discoloration of the tissues, especially when in the dependent posture; and, lastly, the formation of slight patches of discoloration and ischæmic ulcers. These early symptoms, properly treated by rest in bed and iodide of potassium, with a restriction of exercise afterwards, did not, in many cases, develop further, and surgery did not have to be considered.

Reply.

Prof. GASK said he did not take sides concerning the operation of sympathectomy. The discussion seemed to bring out clearly that clinicians had found, in a number of cases, definite advantage following the procedure; there was increased warmth in the limb and relief of pain. Mr. Ross's suggestion should lead to a fruitful line of work. The discussion also seemed to make it clear that sympathectomy was worth proceeding with. He did not lose sight of the fact that improvement usually followed up to a certain point from the mere taking of the patient off his legs and keeping him in bed.

LONDON POST-GRADUATE HOSTEL.

CEREBRAL LOCALISATION IN THE CLINICAL SUBJECT.

AT a meeting held at the Post-Graduate Hostel, Imperial Hotel, Russell-square, W.C., on Nov. 25th, Dr. GORDON HOLMES presiding, Dr. W. J. ADIE opened a symposium on this subject with an account of the localising signs in disease of the prefrontal lobes. He pointed out that the diagnosis was always uncertain, as most of the signs that are considered to be characteristic of disease of the frontal lobes were negative, none were constant, all might be absent in a given case, and all might be indirect results of a distant lesion. Mental changes were fairly constant and were important; they might appear in the loss of power to concentrate, loss of initiative, persistent punning and elementary joking. Dr. Adie related a number of illustrative cases, including some in which diagnosis had been made on the mental symptoms alone. He then described in detail two less familiar signs of frontal disease—namely, exaggeration of Mayer's reflex (proximal phalangeal reflex) and the peculiar grasp reflex which is sometimes found in the hand on the side opposite to the tumour. Every case he had seen in which a unilateral exaggeration of Mayer's reflex had been present had had a unilateral tumour on the opposite side. Any light touch on the palm caused the involuntary grasping movements of mixed flexion and extension; when the object was grasped the patient was unable to let go, and tightened his hold at any attempt to remove it. After it had been removed, the patient would open and close his fingers gropingly. There were other signs, and the speaker was hopeful that more would be found and that the "silent" areas would become fewer.

Jacksonian Epilepsy.

Dr. E. A. CARMICHAEL said that in true Jacksonian epilepsy the patient had a definite sensory aura. In a second type, the progressive convulsion, the patient remembered nothing, but the relatives noticed that the attack started on one side and spread thence; they alone could give any indication of the side of the brain that was affected. In a third type twitchings began, during full consciousness, in one limb, toes or fingers, and spread to the elbow, shoulder, &c. The patient could relate the exact sequence of the attack, but had no sensory aura at all, no gastric sensation, no numbness, and no ocular phenomena. Lesions in the parietal region were associated with numbness or some curious sensation; the sequence of the sensory phenomena did not always fit in with the anatomical relations of the post-central gyrus. In occipital lesions the patient complained of "lights in front of the eyes." Inquiry showed that these lights were on one side and were usually coloured red, green, and blue. These might be the only signs of an occipital tumour. Lesions in the uncinate gyrus were associated with a champing movement and a smacking of the lips, and a peculiar taste or smell which no one else present could appreciate. These fleeting sensations passed on into a dream state in which the patient was almost somnambulistic Disturbances in the posterior part of the temporal lobe often produced no physical signs. The speaker quoted one case whose only trouble was hallucination of people seen over his left shoulder and always passing away to the left as he turned to focus them. The tumour was on the right side. Lesions in the subtentorial region had been described by Hughlings Jackson and Dr. Gordon Holmes as causing tonic convulsions. The speaker, however, had seen 82 cases of gunshot wounds of the cerebellar region during the war, and had never seen anything that could be described as or compared with an epileptiform seizure. He thought the convulsive symptoms in these cases were due to hæmorrhage into the ventricles—certainly not to cerebellar disease. Localisation was considerably aided by a definite history of the nature of the attack and the phenomena that preceded it, the general convulsion, and the observations of the relatives. It must not be thought that all cases of Jacksonian epilepsy had cerebral tumours; in 71 gliomata investigated by him there were only 18 cases of epilepsy, and in 13 epitheliomata of the brain only seven cases showed epilepsy. Jacksonian epilepsy suggested an endothelioma rather than a glioma.

Help Given by the Visual Fields.

Dr. MACDONALD CRITCHLEY said that the optic pathway, on account of its length, was very apt to be affected by lesions within the hemispheres, and

that no clinical investigation was complete without a perimetric chart of the visual fields. Progressive restriction from without inwards was liable to occur in consecutive atrophy following long-standing papillœdema, and must in these cases be discounted as a localising sign. Tumours in the front of the under surface of the optic lobes might press on the optic nerve between the orbit and chiasma, producing rapid blindness in one eye only, with loss of central vision, especially for colours. Retinoscopy showed a characteristic picture of a pale sharply-cut disc on the blind side and vascular engorgement on the other. Lesions about the chiasma were mostly produced by the pituitary; pituitary tumours usually pressed on the chiasma from below and behind, those of the infundibulum from above and behind. A clear-cut bitemporal hemianopia was rather uncommon. If the tumour pressed on one tract only a homonymous hemianopia would result, with early involvement of macular vision, which was a physiological feature of tumours of this region. The result was an enlargement of the blind spot and a central or paracentral scotoma. This would be soon followed by peripheral defect on the temporal side, until the two fused to form an upper-sector defect, and later a complete hemianopia. The nasal field suffered last, being gradually restricted in a bean-shaped manner. Lesions between the chiasma and the cell stations produced a homonymous hemianopia, very different from that produced by lesions behind the cell stations, in which the macular fibres tended to escape. Lesions of the optic radiations in the temporal, parietal, and occipital lobes tended to produce a homonymous hemianopia, but as in the temporal lobe the visual fibres were splayed out, only a portion of them were usually involved by tumours in this lobe, and so the result would be a quadrantic hemianopia. In the parietal and occipital lobes the fibres were packed more closely and lay nearer the surface, and so were more likely all to be caught by a tumour. The points of distinction between lesions behind and in front of the geniculate body were that in the posterior tumours central vision tended to escape, the patient was often unconscious of his field defects, Wernicke's hemianopic pupillary reaction could be obtained, and "optic nystagmus" varied. In certain cases of superficial temporal tumour which touched without damaging the visual fibres, the patient would be unable to appreciate an object at the periphery on the side opposite to the lesion if it were presented simultaneously with another object on the other periphery.

Radiographic Localisation.

Mr. A. P. BERTWISTLE described a method of localisation of cerebral tumours by X ray, with a key radiogram and a "gyrometer." The key radiogram was prepared by photographing the half of a sagitally-divided brain and skull with a mixture of red lead and warm vaseline painted along the chief sulci. Over the head was fitted a scale made of 7 in. of watchspring with the ends connected by a piece of elastic; at 1 in. intervals seven strips of 4 in. spring were fastened at right angles to the central one. Silver wires were threaded through holes 1 in. apart in the verticals. The preparation was carefully orientated and radiographed, and the key thus provided formed a valuable localising guide for the central area. The gyrometer was a thin strip of celluloid tape provided with a cursor at right angles, and this served to localise the brain underlying a cranial defect in the living head. The speaker described a case of depressed fracture over the angular gyrus in which the site of injury was located radiographically.

Dr. G. E. GERKEN described a case of aphasia which had been under his care in Boston. The man was admitted about midnight with a parietal hæmatoma. Next day X rays revealed a crack of the inner table over the Rolandic fissure. Three days later he showed signs of consciousness. On the fourth day he began sentences, but was unable to finish them; on the fifth day he had a similar motor aphasia. As there was no increase in symptoms he was not operated on. Two years later he was seen in a State institution; he had got back the use of his arm after several months, but still had some aphasia.

The CHAIRMAN said that it was not possible to judge Dr. Gerken's case at this interval of time, but in general, if there were no progressive symptoms, it was better to leave well alone; any man was better with a whole skull than with a hole in his skull. He described a case seen by him recently—a woman who had had a series of epileptiform seizures of increasing frequency. Before the first she had had a momentary glimpse of two women in blue and white, with caps and aprons. One of them had a curious leer on her face, and the other appeared threatening. She had a feeling that this one was pulling her head round and dragging her eyes out of their sockets. In subsequent attacks she had rarely seen the figures, the seizures occurring more often at night, but the patient was still very conscious of this sensation of being pulled round. Treatment by suggestion had failed. Lately she had also had a curious smell and taste, and numbness in her right hand. There was definite evidence of a cerebral lesion, probably a cyst in the temporal lobe. Complex visual sensations were always due to lesions of the inner aspect of the temporal lobe. Where the visual cortex itself was the source of excitation, the patient saw simple flashes of light, with or without colour. Dr. Adie had put forward some definite positive signs of frontal lesions, but these were not found in every case, and so far no absolute rules could be made.

MEDICO-LEGAL SOCIETY.

CARBON MONOXIDE POISONING.

A MEETING of this Society took place on Dec. 2nd at the rooms of the Medical Society of London when, in the absence of the President, the chair was occupied by Mr. WALTER C. WILLIAMS, and Dr. DOUGLAS KERR (Edinburgh) introduced a discussion on the medico-legal importance of carbon monoxide poisoning.

One of the greatest social problems of the present day, he said, was the increase in the number of suicides. Every decennium showed an increase in the suicide rate in this and other countries. The chance of dying by suicide was more considerable than anyone not studying the statistics would imagine. One out of every 119 young men reaching the age of 20 ultimately died by his own hand; and last year, of all the males over 20 years dying in England and Wales, 1 in each 65 was a suicide. An interesting study was that of the changing methods in vogue among suicides. In former years the most frequent means of voluntarily ending life were hanging, drowning, cut-throats. These methods still prevailed, but no longer held the prime place, which was taken by poisons; and of the poison methods the most frequent was coal-gas (carbon monoxide). In Scotland not only was that the most frequent poison used, it was the most common of all methods of suicide. In 1899 Prof. Harvey Littlejohn investigated the suicide statistics of Edinburgh for the 30 years ending 1895, and found that the total of 298 did not include one of coal-gas poisoning. But for the years 1920-25 there were 353 suicides, of which 105, or 30 per cent., were due to the inhalation of coal-gas. In some other Scottish towns the percentage was even higher. The method was used by 42 per cent. of the women, as against 25 per cent. of the men. In England the number of suicides by this means had more than trebled in the last six years, while the number of deaths accidentally caused by coal-gas inhalation showed little variation.

The large increase in coal-gas suicides gave rise to several important medico-legal questions. Bakers' ovens and other fixtures in manufacturing establishments figured in the suicide cases as well as the domestic gas oven. Among the cases of death by accident were those in which there was a defective

gas main from which the gas percolated through the soil and poisoned the persons in the vicinity, as in the recent case at Peterborough. In Edinburgh, during the last six years, there had been only seven unquestionable cases of death by gas owing to accident. In many of the suicide cases the victims were found with their heads covered with coats or blankets, to ensure that the gas did its work thoroughly, the gas-tube being secured under these coverings. In some the gas-tube was found still clasped in the hand. In the case of one woman, she wore a mask which had been made out of the tea-cosy. But it must always be remembered that this staging might well be arranged around his victim by a murderer, the time chosen being when he or she was asleep. An interesting case which Prof. Littlejohn investigated was that of a labourer who was employed down a well. A post-mortem examination was ordered on account of the lividity noted after death. It had been said that on returning from work his clothes smelt strongly of gas. But the man left his work at midday on the Saturday, went to his home to dinner, and afterwards walked about the town, returning home about midnight, sleeping afterwards in the kitchen, where burned a coal fire. In the morning he was dead. When coal-gas had been inhaled in concentrated form, five or six hours' breathing of fresh air sufficed practically to clear the air from the system. In this man, though he had been walking about most of the afternoon and evening, the saturation was 70 per cent., therefore any gas from the well must be left out of account. He was gassed in the dwelling-house, but whether it was homicide or suicide could not be determined.

Four chief questions arose in connexion with this subject: (1) the possibility of a mistaken diagnosis; (2) the degree of toxicity and the amount of saturation needed to cause unconsciousness; (3) the time elapsing before a person became unconscious; (4) the rate of elimination. As to mistakes in diagnosis, rarely the appearance—very similar to that left by coal-gas—might be due to the post-mortem formation of nitroxy-hæmoglobin, as in a case reported by Haldane last year. Carbon monoxide gas united with the blood much more readily than did the oxygen of the air, and it caused death not by toxic action so much as by depriving the tissues of the oxygen which it displaced. When the saturation reached 50 per cent. there were distinct symptoms of malaise and weakness; when the 55 per cent. point was reached there was difficulty in walking, and beyond this unconsciousness supervened. With a rapid entry of gas the symptoms came on with a less degree of saturation. Immersion in a gas oven with the gas containing 22 per cent. of CO, as in Edinburgh, would result in unconsciousness, theoretically, in 30 seconds. Elimination of the gas during the first one and a half hours was slow, but after that the rate was accelerated.

Could measures be undertaken to limit recourse to gas for suicide purposes? Most of the CO was obtained from the water-gas which was added to coal-gas to increase its heating properties. The rate of accidental poisoning by gas was two and a half times higher in cities where water-gas was employed than in others. Any alteration in the composition of the gas supplied for domestic purposes did not seem to be a practical proposition. Parliament had inquired into the question of accidental deaths due to gas poisoning, but left the question of suicide alone. Yet there was no important increase in the number of accidental deaths from this cause. Fatal results had occurred when the penny-in-the-slot method of supply was used, and a woman suicide in Leeds borrowed the penny from a neighbour to get the 25 cubic feet of gas which ended her life.

Dr. KERR was of opinion that the great amount of publicity given to cases of suicide by this means had a bad effect on the ill-balanced section of the community, as they were so susceptible to suggestion. When an unusual means was reported in the daily press it was the experience that another instance by the same method soon followed. Ease and apparent freedom from discomfort also played a part in a miserable person deciding to terminate his life. A particular bridge with a low parapet had been for a long time a favourite venue for suicides, but when the authorities made a high parapet, edged with spiked railings, there were no more attempts there.

Discussion.

Sir WILLIAM WILLCOX agreed with Dr. Kerr as to the undesirability of broadcasting minute particulars of suicides, whatever the means taken, as imitation was a large incentive to crime. This was seen not very long ago when weed-killer was used by several people to get rid of those they wished removed. CO was, perhaps, the most insidious poison known. He was sorry Dr. Kerr did not enter into the symptomatology and treatment of the condition, and he asked whether any special treatment was pursued in Edinburgh in addition to the usual oxygen, fresh air, and stimulant treatment. Was injection of oxygen into the tissues or the intravenous use of a suitable solution of peroxide of hydrogen carried out? He had used the latter himself in some cases of the kind with apparent success. A further cause for disquietude was the increasing percentage of CO used in the coal-gas supplied. He spoke of a curious case which was in his wards recently, that of a woman who was admitted because of alleged coal-gas poisoning, and her colour was consistent with that idea. She had penny-in-the-slot gas, and finding that her room was a rather large one, he did not think the required saturation could have been produced. In the room was an empty chlorodyne bottle. Her blood showed only a 20 per cent. saturation with CO, and this would not produce unconsciousness. Dr. Webster found morphine in the urine, and the blood-urea was very high. The fatal issue was really primarily due to very inadequate kidneys, but she had taken two accelerators. This case conveyed a warning against hastily arriving at a conclusion; there should be a careful examination of all the circumstances. Sometimes natural disease simulated the symptoms of coal-gas poisoning.

Dr. ROCHE LYNCH suggested that the alarming increase in suicides by means of coal-gas might not appear quite so great if allowance was made for the increase of the population in the period under review. The rate per mille seemed the best way of arriving at a comparative estimate. He thought the provisions of the Dangerous Drugs Act had played a part in determining coal-gas as such a frequent means of taking life, as drugs formerly used for the purpose were now difficult to procure by ordinary people. Also, the increased average length of life might lead people of advanced years, the subjects of such diseases as cancer, to put an end to their sufferings. With regard to treatment in America the oxygen administered was mixed with 5 per cent. carbon dioxide in order to counteract the tendency to alkalosis which these people showed.

Dr. MORGAN FINUCANE, looking at the question from the standpoint of the public, said that if people determined on committing suicide they would do it by some means or other. He had been medical officer to the Gas Light and Coke Company, and it was his duty to attend inquests on cases of death from this agent. Could nothing be done by scientists to mitigate its lethal properties? He agreed that the increase in the figures shown was alarming, and that the gas was a very dangerous one. He urged more stringent regulations in regard to gas fittings, that no house should be inhabited until a most rigorous examination had been officially made of all pipes, and that there should be a periodic inspection of all gas mains. Electricity afforded a natural relief from the anxieties following in the wake of gas usage.

Mrs. BLANCO WHITE said she had been assured, by an official of the Ministry of Health, that a group of suicides by gas during recent years were men who had been badly wounded in the war and whose subsequent existence and suffering led to this fatal ending. That was confirmed by the Ministry of

Pensions. On the practical side, she suggested that chemists should try to incorporate in coal-gas something which would cause fits of sneezing in those inhaling it.

Dr. DANFORD THOMAS agreed that in these matters imitation had a bad effect, and that there was too much publication of details in these suicide cases. He had interviewed persons who recovered from gas poisoning, and they declared the effect was that of a pleasant dream. He advocated the placing of gas ovens and other receptacles at a greater height from the floor than was customary, then people would not feel they could so easily lie down to secure their passage from life.

Dr. W. D. NEWCOMB referred to statements in text-books that in cases of poisoning by coal-gas areas of softening were found in the brain and hæmorrhages in the basal nuclei. He had not seen these lesions in such cases.

Dr. BERNARD O'CONNOR said he would have thought transfusion of blood would have been the appropriate treatment for coal-gas poisoning, seeing the insidious way in which the poison affected the blood. He believed it was successfully employed some years ago.

Reply.

Dr. KERR said the mixing of 5 per cent. CO_2 with the oxygen used stimulated the respiratory centre, and elimination of the gas proceeded quicker. This method was held to have successfully replaced treatment by blood transfusion. The figures of increase would have appeared little less formidable if account had been taken of the increase of population, for the latter was relatively small over the period. In England and Wales in 1913 there were 276 cases of gas suicide, 149 accidental gas deaths; in 1923, 688 and 178 respectively, and in 1925, 762 and 163. In Scotland in 1913 there were 10 suicides from coal-gas, and 267 by other means; in 1923, 70; in 1924, 91; while the deaths by other means were 257 in 1923, 284 in 1925. Most suicides were committed between 45 and 55 years of age, and the number was very small after the sixty-fifth year. Accidental cases had increased by only 20 in six years. He had seen lesions in the brain after coal-gas poisoning of a character easily demonstrable to students. He agreed that electricity was the remedy for the evils which had been disclosed.

ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION.

A QUARTERLY meeting of this Association took place on Nov. 16th at the Horton Mental Hospital, and later at the West Park Mental Hospital, Epsom. Lieut.-Colonel J. R. LORD, the President, took the chair, and Dr. P. K. MCCOWAN read a paper written by himself and Dr. J. S. HARRIS on

Chronic Epidemic Encephalitis.

Hyoscine, they said, could be regarded as a specific in the treatment of encephalitic Parkinsonism. They had investigated carbohydrate metabolism as represented by the blood-sugar curve, and had made experiments on muscular tonus and on altered affectivity, as shown by the psychogalvanic reflex, and they had found that abnormality in these functions in patients with encephalitis could be partially corrected by hyoscine. In the normal person subcutaneous injection of 1/100th of a grain of hyoscine hydrobromide was followed, in 10 to 15 minutes, by dryness of the mouth and throat, a sensation of giddiness, some mental confusion, slurring of speech, and inability to walk straight. There was also marked impairment of accommodation, so that none but the largest print could be read. Later there followed a feeling of laziness or fatigue, and if left to himself the person would fall asleep and remain asleep for several hours. Thus it was evident than in normal people the effects of hyoscine were depressant—a result contrary to that seen in encephalitis. It practically all cases of this disease a suitable dose of hyoscine caused improvement; the general muscular rigidity was reduced, while tremors of the face and extremities and excessive salivation and lacrymation disappeared. The patient's alertness was also increased, articulation was improved, and some expressiveness crept into the rigid countenance.

The functional aura, went on Dr. McCowan, was found in encephalitics more definitely than in any other group of patients gathered in a mental hospital, and this, they thought, gave a clue to the discovery of an organic basis for the so-called functional nervous disorders and psychoneuroses. In encephalitis lethargica there might be subtle biochemical or biophysical abnormalities. The lesion involved the basal ganglia, a centre of prime importance in the instinctive and emotional life of man. Dr. McCowan further described laboratory investigations carried out in conjunction with Capt. S. A. Mann at the Maudsley Hospital. [Some of these they have already reported in THE LANCET, 1926, i., 802.] The effect of injecting 1/100 gr. of hyoscine was to cause hypoglycæmia, but there might be a secondary hyperglycæmia two hours after the glucose meal and the drug injection. Similar results were obtained with atropine. These drugs also caused inhibition of the external secretion of the pancreas and a general arrest of the secretions of the alimentary tract. The blood-sugar values obtained in encephalitis were consistent with the theory that it was a chronic toxæmia. The results of the injection of hyoscine simultaneously with the ingestion of glucose permitted of a classification of the cases into two groups: (1) those exhibiting Parkinsonism with a depression of blood-sugar; (2) those, not exhibiting Parkinsonism, in which the blood-sugar curve did not show improvement after the injection. Hyoscine could be given either subcutaneously or by the mouth, but the best effects followed a combination of the two methods; 1/100 gr. was injected in the morning, and 1/50th gr. was given by mouth during the day. Some of the unpleasant effects were combated by giving 1/10 gr. of pilocarpine. Some patients had been having hyoscine for two years, and no deleterious effects were traceable. The action of the drug was only temporary, and when it was discontinued there was a relapse into the former state. Stress was laid on the fact that these patients were still suffering from an active disease, not the mere after-effects of an acute process. The treatment must still be regarded as in the experimental stage. In a trial of various drugs in the treatment of chronic encephalitis two had been found very helpful—namely, tryparsamide and argotropin. These were given to all cases of both types. Tryparsamide seemed to gain access to the central nervous system in a way that no other arsenical preparation appeared to do, and no case had shown progress of the disease since it was given. The course was eight weekly injections of 2 to 3 g.

Dr. HARRIS demonstrated cases, and Major N. ROBERTS welcomed the guests to the hospital.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

EXHIBITION OF CASES AND SPECIMENS.

A MEETING of this Society was held in Sheffield on Nov. 19th, Mr. W. GOUGH (Leeds), the President, in the chair.

Miss FRANCES IVENS (Liverpool) showed a specimen of

Melanotic Sarcoma of the Clitoris.

The patient was aged about 58, 8-para, and very stout. She had noticed a small lump in the anterior portion of the vulva for a year.

The clitoris was replaced by a softish nodular growth, pigmented in patches, which extended on to the left labium minus and the prepuce of the clitoris was stretched over the tumour. The growth was movable on the deeper structures. In April, 1925, Miss Ivens excised the whole vulva as radically and deeply as possible. No enlargement of the inguinal glands could be detected and so far there had been no recurrence

The tumour consists of masses of spindle cells with well-stained nuclei arranged in an alveolar manner in a connective tissue stroma. Granules of brownish pigment are scattered through the connective tissue and are present in some of the cells, but in some areas pigment is absent. The tumour is covered by thinned-out stratified epithelium.

Cases of melanotic sarcoma of the clitoris, said Miss Ivens, were very rare, and said to be extremely malignant. It was possible that this tumour arose from the chromatophores or connective tissue pigment cells of the skin, and was therefore a melanotic sarcoma and not a sarcoma associated with altered blood pigment—or sarcoma hæmorrhagica. Miss Ivens also showed a specimen of

Endometrioma of the Broad Ligament.

The patient, aged 20, had suffered from severe dysmenorrhœa with profuse and prolonged menstruation from the onset when aged 15. Bilious attacks had been frequent, and two years ago there was severe abdominal pain with vomiting. The cervix was dilated in January, 1925, but the condition grew worse, and in December, 1925, Miss Ivens opened the abdomen, removed a swollen, kinked, and unhealthy-looking appendix, and incised some small cysts of the ovaries. In the right broad ligament close to but not adherent to the body of the uterus was a swelling the size of a large marble, dark in colour. There were no adhesions. It was enucleated and the peritoneum stitched. The tumour proved to be a cyst containing dark tarry fluid, was lined by cubical epithelium, and showed in its wall typical endometrial stroma and glands embedded in and surrounded by fibrous tissue.

This case, said Miss Ivens, was interesting as it supported the view that endometriomata were due to fœtal displacement of Müllerian tissue and not to endometrial grafts. A somewhat similar specimen, belonging to Dr. Everard Williams, had been shown at the Royal Society of Medicine last year.[1]

Ovarian Tumours and Uterine Tumours.

Dr. J. W. BRIDE (Manchester) showed specimens of ovarian tumours.

CASE 1.—He saw the patient, a girl of 15, on Sept. 29th last on account of persistent vomiting and acute left-sided abdominal pain. Her pulse-rate was 130 and temperature 101° F.; there was great rigidity in the hypogastrium and inability to pass water. The symptoms dated from a menstrual period about a week before, and there had been regular menstrual periods since the onset of menstruation in August, 1925, always with dysmenorrhœa. An indefinite mass was to be felt in the left iliac region. Ovarian cyst with twisted pedicle was diagnosed and at operation a dermoid cyst, black in colour and about the size of a fœtal head, was found lying in the utero-vesical pouch. The right tube and ovary were normal. The cyst was removed and the patient made a good recovery.

CASE 2.—Fibromata of both ovaries were found in a virgin of 19 years complaining of pain and swelling in the hypogastrium with primary amenorrhœa. For her age the patient was distinctly childish and she had had no molimina. A hard mass, non-mobile and tender, was felt in the left iliac region, and per vaginam the pelvis was found to be filled with hard nodular growths. At operation Dr. Bride found the large left and smaller right ovarian tumour, and, being doubtful of their nature and feeling sure that all ovarian tissue was destroyed he performed panhysterectomy. There was no ascites. The patient made a good recovery.

Dr. Bride said that Hoon, writing in *Surgery, Gynecology, and Obstetrics* in 1923, had stated that fibromata of the ovaries might occur at any age after puberty, that there might be comparatively few symptoms, that ascites did not necessarily mean malignancy, and that menstruation was usually normal. In text-books it was often said that ascites was found so often with fibromata as to be almost a symptom. Ought not this statement to be modified? In the cases he had seen ascites had never been present. Pain, he thought, was in this case an important symptom in making the diagnosis against fibroids.

Mr. J. ST. G. WILSON (Liverpool) described an unusual case of carcinoma of the cervix.

A nullipara, aged 30, married seven years, complained of intermenstrual bleeding for four months. The cervix was replaced by a crater, ulcerating, friable, and bleeding; the supravaginal cervix was thickened and the uterus fixed. There was albumin in the urine. At operation growth was seen on the surface of the uterus. The patient died ten days afterwards; the specimen showed infiltration of the whole uterus; the tumour was a squamous-celled carcinoma, and secondary growths were found in the lumbar glands.

Dr. E. O. CROFT (Leeds) commented on the rarity of spreading to the corpus.—Dr. K. V. BAILEY (Manchester) asked if sections of the upper portion of the growth had been cut to exclude its being a different growth from the cervix.

Prof. W. F. SHAW (Manchester) showed a case of acute torsion of a uterus containing a fibromyoma.

The patient, aged 70, had complained for 18 months of recurrent attacks of nausea which had been put down to biliousness, but on the last occasion her doctor had examined the abdomen and found a large, hard, tender tumour which, she stated, had been there for over 25 years. The tumour was very hard, extended to the umbilicus, was apparently fixed to the uterus, and was extremely tender.

At operation it was found that the fundus uteri contained a fibroid the size of a fœtal head and of stony hardness due to calcareous degeneration. The uterus and appendages were twisted round in two complete turns, and so had formed a narrow pedicle just above the level of the internal os no thicker than a man's finger. The broad ligaments and tubes were of a deep purple colour, many of the veins were thrombosed, but in some the blood was still fluid, so apparently there was a small circulation still kept up. The tumour was easily removed at the site of the torsion and the patient made an uninterrupted recovery.

Prof. M. H. PHILLIPS (Sheffield) described a case of *Advanced Abdominal Pregnancy.*

His object, he said, was to draw attention to the difficulty of clinching the diagnosis of an advanced abdominal pregnancy by the ordinary means of examination. In the present case, although palpation failed to define any part of a fœtus in the abdominal tumour, an X ray photograph by Dr. J. L. Grout had shown not only a fœtus, but also a position and condition of that fœtus which could best be explained by its being dead and in an extra-uterine sac.

Two and a half years ago the first pregnancy of the patient, whose age was 30, ended in miscarriage at 11 weeks and a dangerous attack of pelvic peritonitis. Menstruation was scanty afterwards, but she did not miss a period until March, 1926. Her last period was on Feb. 13th. There was a slight show unaccompanied by pain nine weeks after. Morning vomiting, secretion in the breasts, steady enlargement of the abdomen duly followed. She quickened at four and a half months and felt movements daily until Sept. 4th. On that day she had severe abdominal pain accompanied by a dark bloody discharge and also diarrhœa and vomiting. Premature labour was suspected and her doctor took her into a maternity home. The external os just admitted the finger-tip but not more, and in the course of six days the pain and vomiting ceased and the patient was sent home.

No further fœtal movements were felt, however, and the breasts and the abdomen lessened in size. A slight, very dark, bloody discharge occurred daily. When seen by Prof. Phillips on Oct. 21st (36 weeks after the last period) she had a globular elastic mass visibly distending the abdomen and reaching from the pelvic brim to a point 2 inches above the navel. It possessed none of the signs of an enlarged uterus and no fœtal parts could be made out. On vaginal examination the cervix was soft, the os was closed to the finger, and bimanually the slightly enlarged body of the uterus could be felt behind and to the right of the lower pole of the abdominal tumour, which could just be reached at the pelvic brim. The pelvo-abdominal tumour felt just like an ordinary cystadenoma of the ovary.

The abdomen was opened on Nov. 12th, and on incising the peritoneum a pint or so of thin clear fluid escaped from a localised space, within which was exposed a second sac—the amnion—closely shrouding the fœtus. This sac contained rather less than half a pint of thick, greenish, opaque fluid. Both fluids were odourless. The fœtus was lifted out and the cord divided. The sac was now seen to line the true pelvis and the abdominal cavity to above the umbilicus. The transverse colon, adherent to the abdominal wall, formed the upper limit of the gestation sac. The placenta was found plastered on the upper half of the sacrum and the adjacent lower half of the lumbar spine. It was of a dull grey colour and appeared bloodless. No attempt was made to separate it from the underlying aorta and other large vessels. The patient was now going on well.

Dr. CROFT demonstrated a specimen showing axial rotation of a fimbrial cyst.

Mr. W. W. KING (Sheffield) read a paper on Some Aspects of Concealed Accidental Hæmorrhage, discussion on which had to be postponed.

[1] THE LANCET, 1925, ii., 1228.

Reviews and Notices of Books.

INCAPACITY OR DISABLEMENT IN ITS MEDICAL ASPECTS.

By E. M. BROCKBANK, M.B.E., M.D., F.R.C.P., Hon. Physician, Royal Infirmary, Manchester. London: H. K. Lewis and Co., Ltd. 1926. Pp. 120. 7*s.* 6*d.*

THE certification of incapacity or disablement, whether as the result of disease, injury, or accident, is a responsible duty which devolves upon most medical men in active practice, more especially upon those concerned in National Health Insurance practice. The widespread effects of the Workmen's Compensation and Employers' Liability Acts also impose upon medical practitioners important duties in this regard. The growing tendency to the development of pensions schemes for workers will naturally increase these duties and bring about special problems in assessment of incapacity and its certification. The fact that disputes upon such questions are inevitable, and that they often have to be settled by arbitration and sometimes by litigation, has resulted in a specific legal interpretation of certain terms in more or less common use. It is necessary for those giving certificates in connexion with disability or incapacity claims to have some knowledge of these special meanings, and some acquaintance with the law affecting certification in these matters. Dr. Brockbank, of Manchester, who has had a wide experience of insurance problems, has published a book which we can cordially recommend. The information it contains was collected for his own guidance, but will prove of the utmost value to others engaged in practice. He begins by defining incapacity or disablement, and points out that the law distinguishes between "incapacity to work" and "incapacity for work"—the former denoting total disablement for all work, while the latter means only some disability which restricts working capacity. The effects of accident and disease upon the working capacity are considered from the points of view of the worker and of the employer. The medical and surgical causes of disablement are next considered, and the alphabetical arrangement adopted facilitates reference. The influence of each upon the working capacity is described in an interesting way, and illustrative cases are quoted. In conditions where disease such as aneurysm, heart affection, or epilepsy has been a factor in death during employment, the circumstances in which claims have been successful or unsuccessful are described, and authorities are quoted.

Dr. Brockbank's book is timely in its publication, and it should serve a useful purpose.

RENAL SURGERY.

By F. MCG. LOUGHNANE, F.R.C.S., Surgeon to St. Mary's Hospital, Plaistow; Assistant Surgeon, All Saints' Hospital for Genito-Urinary Diseases. London: Longmans, Green and Co., Ltd. 1926. Pp. 210. 10*s.* 6*d.*

THE avowed object of the author is to convey to the student and general practitioner an up-to-date knowledge of the surgery of the kidney in as concise a manner as possible. There are four preliminary chapters which describe the anatomy of the kidney, the changes in the urine in renal disease, the estimation of renal function and pain in kidney disease. The following chapters are devoted to the several diseases which attack the kidney, ending with one on operations.

In the interests of conciseness, we may suppose, dogmatic statements are made, some of which are by no means generally accepted. For example, the author says that in renal tuberculosis ureteric catheters should always be passed on each side. No mention is made of any possible danger associated with this procedure, the ill-results of which, as Wildbolz points out, may not be manifest for many months. Again, in bilateral stone it is recommended to remove that from the more damaged kidney and to wait three to four months before taking the stone out of the healthier one. Many surgeons prefer to reverse the procedure and at any rate save the less affected organ. We are told that nephrectomy for hydronephrosis should never be performed unless "absolutely essential," as in most cases functioning renal tissue is present. This is true, but we are not informed how uncertain are the results of plastic operations upon the ureter and pelvis, nor when nephrectomy is regarded as absolutely essential. Mr. Loughnane says that the renal pelvis should never be injected under anæsthesia, because damage may be done. But if a proper apparatus be used, injury by injection is impossible, and the real objection to anæsthesia is that the patient cannot hold his breath to have the pyelogram made. This applies equally to children in whom the author, a few pages on, says the injection may be made under general anæsthesia. On page 77 the statement is made that hydronephrosis can be cured by renal sympathectomy. The evidence, however, on the value of this fascinating operation is, up to the present, anything but conclusive. Possibly ureteric stone is not considered to come under the term renal surgery, for there is no systematic account of this condition and how to deal with it. Among functional tests, the author places most reliance upon the indigo-carmine and the urea-concentration test. He does not believe that a blood-urea estimation is so good an index of suitability for prostatectomy. We are glad to see that the long sojourn of a catheter in the ureter is deprecated in more than one place.

The book is nicely produced, with some good pyelograms; the illustrations of specimens would have been clearer if reproduced from drawings rather than from photographs.

THE X RAY IN EMBRYOLOGY AND OBSTETRICS.

By W. A. NEWMAN DORLAND and M. J. HUBENY. London: Henry Kimpton. 1926. Pp. 420. 50*s.*

EMBRYOLOGY has been the subject of radiological research from its earliest days. This volume is rather an epitome of the extensive literature on the subject than an original contribution—in fact, it is difficult to find evidence of any original work, even the illustrations being attributed to other sources. The first chapter, which is typical of the rest, is on the influence of X rays on living tissues and consists of 24 pages which cover an appended bibliography of something like 250 references; the authors are scrupulously careful to give credit to the correct source of every observation recorded. The sincere attempt to bring together the work of other people by this method has led to an uneven compilation with serious gaps. For instance, the account of embryonic development of the osseous system is most incomplete, and the authors give no description of their own investigations or determinations of the times of the appearance or union of the various epiphyses. The carpus is satisfactorily described, but only three bones of the tarsus are mentioned. Some of the statements are not clear; for example, the authors, quoting Pryor, say, "The epiphysis of the ulna shows ossification in the sixth to eighth year of the postnatal growth, and in the radius about the eighth to tenth month"—a sentence which implies either that these bones have only one epiphysis each or that the epiphyses at each end appear simultaneously. We can find no other reference to these important epiphyses.

We have, first, an account of the cardiovascular system as shown by means of radiograms of opaque injections, and a more complete description of the various congenital and developmental bony abnormalities. The second half of the book is devoted to the obstetrical uses of radiology, and a good account is given of the various methods of radiological pelvimetry and the X ray diagnosis of normal and abnormal pregnancy. The last 100 pages describe various monsters, many of which have been radiographed.

Those illustrations, which have been reproduced from published articles and not from originals, have lost much detail in the double reproduction. Those on pp. 68, 181, and 299, to give only three examples, are valueless. The illustration on p. 163 is upside down.

A compilation of this type, although it may contain a wealth of information carefully brought together and well indexed, inevitably lays itself open to criticism. Its merit is that anatomists, radiologists, and gynæcologists will find in its pages information difficult to obtain from scattered literature and, on the whole, well epitomised. This purpose would have been better served had the authors given the titles of the articles that are quoted in the bibliographies at the end of each chapter.

THE SURGICAL TREATMENT OF SPINA BIFIDA.

Zur Bewertung der chirurgischen Behandlung der Spina Bifida. By Dr. KARL M. STOCKMEYER, Basel. Berlin: S. Karger. 1926. Pp. 46. M1.80.

THIS slender monograph is based on some 42 cases from the records of the Children's Hospital in Basel, and on 171 cases from the literature, a total of 213. Numerous tables are given of the results of operation in the different types, the following being considered separately: meningocele, myelocystocele, meningomyelocele, meningomyelocystocele, and spina bifida cystica. Head, cervical, dorsal, lumbar, lumbosacral and sacral varieties are distinguished. Details are given of operative procedures. Slight though it is, the book contains a singularly complete investigation of a subject that has been rather neglected, and may conceivably serve to modify the pessimistic view usually taken of the treatment of these congenital malformations. As it is, the figures given by Dr. Stockmeyer are depressing enough: mortality-rate of all cases operated on, 46 per cent.; improvement or cure of existing paralyses, 3·9 per cent.; stationary condition after operation, 79·8 per cent.; aggravation of symptoms after operation, 16·2 per cent.

MODERN OPHTHALMOLOGY.

A Practical Treatise on the Anatomy, Physiology, and Diseases of the Eye. Fifth edition. Revised, enlarged, and rewritten. By JAMES MOORES BALL, M.D., LL.D., late Ophthalmic Surgeon to the St. Louis City Hospital. Philadelphia: F. A. Davis Company. 1926. With 598 text illustrations and 24 coloured plates. Pp. 721.

THE first edition of this work appeared in 1904 as a volume of 820 pages. This fifth edition is practically a new book, most of the chapters having been rewritten and much material added. The work is now bound in two volumes, each being about the size of the original one. Several well-known ophthalmologists have coöperated in the production of the work, and the result is a complete text-book of the embryology, anatomy, physiology, and diseases of the eye, which can hold its own in comparison with other first-rate text-books on a similar scale, such as those of Fuchs and de Schweinitz. This edition is dedicated to the Ophthalmological Society of the United Kingdom, of which the distinguished author has lately become a member, and there are several references to the recent work of British ophthalmologists. It is, of course, impossible to make a text-book really exhaustive. For instance, the anatomy of the ciliary region is given in this book in considerable detail, including some of the sections published by Prof. Arthur Thomson. The functions of the ciliary muscle are less satisfactorily dealt with, and no mention is made of Thomson Henderson's researches on the subject. Again, the slit-lamp with binocular corneal microscope, which is now considered by several modern ophthalmologists as an essential part of their equipment, receives only cursory mention. There are certain inconsistencies in different chapters. In that on sympathetic ophthalmia the treatment by salvarsan is briefly noted. Under "salvarsan" in the chapter on therapeutics written by Dr. W. F. Hardy its use is said to have been followed by extremely satisfactory results, but in neither place is there any hint that success is dependent on the blood count. These examples are given only to show that it is well-nigh impossible for a large text-book to keep quite up to date. The most stimulating text-books are those which do not attempt to be exhaustive, but make apparent the personal message of the author.

Dr. Ball's work, however, is eminently readable and reliable. The print is luxurious and the illustrations excellent.

FACTS ON THE HEART.

By RICHARD C. CABOT, M.D., Professor of Medicine and of Social Ethics at Harvard University. London and Philadelphia: W. B. Saunders Company. 1926. Pp. 781. 35*s*.

To study the living rather than the dead has been the fashion of pathology in recent years, and the pathologist of to-day tends to frequent the experimental laboratory and the ward as well as the post-mortem room. That morbid anatomy correlated with clinical observations still affords a most fertile field for research must not be forgotten; this lesson, in its special application to cardiology, is exemplified in Dr. Richard C. Cabot's stimulating book. Dr Cabot has here followed the same attractive method which he adopted with so much success in the teaching of students, reasoning from the post-mortem to the clinical findings. His material consists of nearly 2000 cases in which the cardiovascular system was involved, in a consecutive series of 4000 autopsies performed at the Massachusetts General Hospital over a period of 23 years. Such a wealth of material provides much food for thought and speculation. The critical reader will not see eye to eye with the author in all his sweeping generalisations, but he cannot fail to be grateful to him for providing so many protocols, both clinical and pathological, copiously illustrated with beautiful photographs, radiograms, and charts. The facts are there, and on those facts the reader can base his own conclusions.

The common types of heart disease are rheumatic, syphilitic, and hypertensive. These three constitute rather more than 90 per cent., while acute and subacute endocarditis account for less than 10 per cent. of the cases in this series. From a pathological standpoint angina must be regarded as a symptom complex rather than as a definite entity, for it has no constant anatomical basis. The section devoted to hypertensive heart disease is of particular interest. In this group, which in numbers exceeds that of all other groups of heart disease put together, the author includes all cases of enlarged heart which were not associated with either chronic pericarditis or with any valvular lesion. He believes that the condition is essentially independent of both nephritis and arteriosclerosis. In only one-third of the hypertensive cases did death result from heart failure, while in the remainder it was due to cerebral hæmorrhage or to some intercurrent disease. Another lesion which frequently remained latent for 15 or 20 years after the original infection without producing symptoms was syphilitic aortitis, but after clinical manifestations made their appearance death usually followed within two years. Attention is called to the frequency with which both pericarditis and mitral stenosis are missed during life; while, on the other hand, it is surprising to find that in seven cases only out of the whole 1906 investigated was mitral incompetence present post mortem unassociated with stenosis. It was, in fact, one of the rarest of valvular lesions.

Dr. Cabot is inclined to be hard on the clinician, and we must hope that he is over-stating his case when he says that in his experience in most patients diagnosed as suffering from heart disease the heart is perfectly sound. Conclusions based on such an extensive research cannot fail to command attention, but the statements that myocarditis is not clinically recognisable, and that the sounds produced in pericarditis are indistinguishable from intracardiac murmurs, will not pass unchallenged. How far one is

justified in applying evidence derived solely from fatal cases to heart disease in general is an open question; but this doubt in no way detracts from the value of the observations recorded in Dr. Cabot's book, which forms a valuable contribution to our knowledge of cardiac pathology.

THE QUARTZ MERCURY-VAPOUR LAMP.

Its Possibilities and Uses in Public Health and General Practice. By J. BELL FERGUSON, M.D., D.P.H., Medical Officer of Health, Tuberculosis Officer, and School Medical Officer, County Borough of Smethwick. With an introduction by Sir HENRY J. GAUVAIN, M.A., M.D., M.C., Medical Superintendent, Lord Mayor Treloar Cripples' Hospitals. London: H. K. Lewis and Co., Ltd. 1926. Pp. 106. 6s.

THOUGH books on ultra-violet therapy are accumulating at a great rate there is plenty of room for one by Dr. Ferguson, who, as medical officer of health, tuberculosis officer, and school medical officer for the County Borough of Smethwick, has had excellent opportunities of seeing the beneficial effects of this form of therapy on the ailments for which it is suitably prescribed. He holds that for the man in general practice and for the busy medical officer of health the quartz mercury-vapour lamp is the only practical apparatus, and his remarks on treatment are restricted to this source of radiation.

The first two chapters are devoted to a brief historical sketch and to the physical, chemical, and physiological properties of ultra-violet radiation. Then follow chapters on technique, dosage, and the possible dangers of this form of therapy. The next section describes the actual working of a modern public health department, with details of the clinic, staff, and equipment necessary for its maintenance, while a discussion follows on types of disease met with in general practice which are benefited by ultra-violet radiation. The succeeding pages contain many useful hints to beginners, including a table of suggested initial doses suitable for a large variety of complaints.

The author is both critical and enthusiastic of the future of ultra-violet therapy, for on p. 98 he says: "Ultra-violet radiation should be available in every infant welfare scheme in every town. Prophylactic use of ultra-violet radiation in the first year of life would banish rickets, tetany, and spasmophilia from our infant population." It may be hoped that opportunity to test this optimism will not be lacking.

MEDICAL CASE-TAKING.

By ALEX. MILLS KENNEDY, M.D. Glasg., Professor of Medicine, University of Wales, and Director of Medical Unit, Welsh National School of Medicine, Cardiff. London: Edward Arnold and Co. 1926. Pp. 148. 5s.

Prof. Kennedy has written a guide for procedure at the bedside to help the clinical clerk entering upon his duties for the first time. We believe the book will be of service as a brief introduction to clinical work rather than as a guide-book to be carried round and consulted at intervals. It presupposes that a preliminary training in physical signs and laboratory methods has already been given; for this reason, doubtless, certain axioms have been omitted, but it is hardly safe to assume that the junior student has mastered the elements of clinical examination. Since Prof. Kennedy has produced a useful little book which should be popular among students in other schools than his own, where clinical instruction may not always precede ward work, it would be well, in future editions, to treat the reader as quite a beginner. In dealing with the heart the student is instructed to mark the position of the apex beat with a skin pencil; but no definition of the apex beat is given and he may possibly be confronted with a large area of apical pulsation and be unable to decide which point constitutes the "apex beat." For the rest, the book is well written, concise, and clear, and, on the whole, accurate. The author mentions Austin Flint's murmur (p. 78), but not Graham Steel's. In describing certain types of respiratory movement no mention is made of the "inverted" type frequently met with in children and only scant attention is given to the value of eliciting tactile fremitus in the examination of the thorax. In discussing the palpation of the spleen Prof. Kennedy states "when there is some slight enlargement the lower edge of the spleen may just be palpable below the costal margin." It is usually accepted that a palpable spleen is probably at least twice or three times the normal size. Among minor points calling for criticism is the printing of the symbol for hydrochloric acid as "H.Cl."

In these days when the student is much distracted from the wards by laboratory work, it is satisfactory to see that in our schools the foundations of clinical medicine are still well and truly laid.

THE MEDICAL DIRECTORY, 1927.

Eighty-third annual issue. London: J. and A. Churchill. 1927. Pp. cviii. + 2163. 30s., post. 1s.

IN our office the advent of a new issue of the Medical Directory is hailed every year with satisfaction, for by the late autumn its predecessor, in spite of a stout binding, has become thumbworn and a little ragged. This is hardly surprising, for the book is more used than any other on our shelves. It is not insular prejudice that makes us prefer the scope and format of this Directory to that of corresponding publications issued in other countries; experience has convinced us that desirable information about doctors is given more clearly here than in most similar works, neither cross references nor a good memory for symbols and abbreviations being required. There are 1405 more names in the book this year than last, the increase being divided fairly evenly over the various sections except the Services, where the diminution which began in 1922 still continues. The accuracy of the list is very high, but we cannot help still regretting the absence of the asterisk which used to show so clearly which practitioners had failed to respond to requests to confirm the information and bring it up to date. In the list of Titles Conferred there are some trifling inaccuracies and one or two names whose bearers are deceased. A little space has been saved by omitting unnecessary details of London medical societies, but the list of coroners which has disappeared will be missed. We congratulate the Medical Directory on its eighty-third birthday and rejoice in the assurance that in spite of its years its circulation is unimpaired.

DISEASES OF THE EAR.

Hunter Tod's Diseases of the Ear. Second edition. Revised and largely rewritten by GEORGE C. CATHCART, M.A., M.D., Consulting Surgeon to the Throat Hospital, Golden Square. London: Humphrey Milford, Oxford University Press. 1926. Pp. 333. 10s. 6d.

As it is nearly 20 years since the late Mr. Hunter Tod wrote his excellent little manual on diseases of the ear, considerably more than a mere revision has been necessary in the preparation of a new edition. Dr. George C. Cathcart, who undertook the work and who has done it well, has rewritten portions of the book and rearranged a great part of it without materially increasing its size. After a short introduction on acoustics, he has brought the description of the anatomy and physiology of the ear together into one chapter; and this is followed by another on examination, including the testing of the auditory and vestibular systems. This is an improvement on the original scheme of the book, where these subjects were scattered through the various chapters on external ear, tympanic membrane, and middle ear. The account of the labyrinthine tests is particularly clear for so abbreviated a description. The book presents, in a brief and easily read form, just the information required by the practitioner.

THE LANCET.

LONDON: SATURDAY, DECEMBER 11, 1926.

EPSOM COLLEGE: THE NEW SANATORIUM.

WE publish to-day an appeal from Dr. RAYMOND CRAWFURD, the Chairman of the Council of Epsom College, for the provision at the school of a new sanatorium, with an isolation block attached. The existing sanatorium is, Dr. CRAWFURD says, and as the many doctors who have visited the school know, quite out of date both in the accommodation which it offers and in its arrangement, making it uneconomical in working while providing no proper facilities for the isolation of infectious cases. Having regard to the fact that Epsom College, which now takes its place among the large public schools of England, had its origin in medical enterprise, it is in a sense a reproach to the medical profession that the school, with which their interests are so closely bound up, should not provide, through its machinery for the maintenance of the health of its scholars, a model to other schools; it should be in a position to deal with accidents, with sickness, and with infections among its scholars on the most modern and efficient lines. But for material reasons it can do nothing of the sort. The school is healthy, and unremitting attention ensures that it should be so, but it is without the proper equipment for the purpose.

The provision of a new sanatorium and isolation block at Epsom College is, in fact, now a most pressing need, for the well-equipped isolation block, which is a necessary part of the sanitary accommodation of a public school to-day, is represented at Epsom by a wooden structure with a limited life. The authorities at Epsom appeal to the practitioners of the country to come to their assistance, but before doing so they have made a thorough and careful inquiry into all the circumstances. The experience of schools like to Epsom suggests that the main sanatorium should afford 20 beds, while the isolation block should contain 40 beds for time of epidemic. The medical officer of the College, with the aid of a distinguished hospital architect, has prepared outline plans for a model sanatorium and isolation block of this capacity, and the estimated cost of the new buildings, though economy has throughout been considered, is £25,000—£15,000 for the sanatorium and £10,000 for the isolation unit. This, of course, is a very large sum of money, and the appeal made in our columns concerns in its practical application a profession which cannot be called a lucrative one as a whole. It is true that a small gift—only 10*s.*—from every medical man on the Register would result in the immediate finding of the necessary sum, and considering the inclusive nature, from the professional point of view, of the benefits offered by the Epsom Foundation, it is right to say that the claim upon the members of the profession is also inclusive. There are excellent reasons why all should give in ratio to their ability. Free education to the needy sons of deceased or disabled medical men, and the provision of pensions to aged or infirm medical men or to the widows of medical men, form the objective of the Royal Medical Foundation. Those familiar with the business side of medical practice in this country—those who know its emoluments, its strains, and its risks from early disablement or premature death—realise fully that a great section of the profession and their dependents must be found every year in a position when the free education of a child is a boon beyond description in value, while the alleviation of more immediate distress, through pensions to aged doctors or the widows of doctors, may mitigate situations whose real character has to be known if their bitterness is to be appreciated. The Foundation, despite both general support by doctors, and many signal acts of individual generosity, has no pecuniary surplus whatever; its carefully husbanded money is all required to finance the educational and pension systems; thus Dr. CRAWFURD'S suggestion is a logical one that this great and necessary charge for the maintenance of the health of the scholars should be met in the medical profession by a self-imposed poll tax. But the thing that is logical is not always the thing that gets done, and, while we endorse heartily Dr. CRAWFURD'S plea for an immediate collection on a capitation basis, we agree with him that it would be idle to look only here for the large sum required.

Long division sums may suggest an answer to the problem on paper, but in fact, though much money, it is hoped, will be obtained from a mass of small subscriptions, individual donations of larger sums will be needed. It is fair to look to the public for assistance here, for Epsom College plays a great professional part, and the public freely acknowledges indebtedness to the profession. The College, although having a distinctive connexion with medicine, possesses a Foundation moulded on that of Eton or Winchester—that is to say, that, while the best facilities for the education of the scholars on this Foundation are provided, a welcome is extended, for the enjoyment of those facilities, to the children of parents who are able to meet the ordinary public school charges. Doctors are in a good position for bringing to the notice of all sections of the public—the wealthier sections as well as those less fortunate—the value of any public movement, and we cannot think of a direction for the pecuniary endowment of medicine that would be more highly appreciated by doctors than support for Epsom College in its efforts for the health and safety of the boys. The position of a medical man incapacitated or deeply impoverished, while his children are at an expensive school age, and equally the position of a widow of a medical man who has died before any opportunity of saving has occurred, are particularly pathetic. No words are needed to prove this, and a plea for subscriptions based on such facts would surely bring large returns if it were largely advanced. The authorities at Epsom, in recognising their responsibilities before any misadventures have brought them home, are taking a brave step. They must be supported.

THE CONTROL OF PERIPHERAL CIRCULATION.

THE nervous control of the peripheral parts of the blood-vessels which supply the skin and muscles of the limbs is undoubtedly very complex, but the clinical observations recently discussed at the Royal Society of Medicine (vide p. 1215 of this issue) make it desirable to consider what is known of it from physiological experiment. Surgeons report cases in which division of the nerve plexus around the main artery supplying a limb has been followed by an increase in the blood-flow through the skin of that limb, as shown by increased warmth and by flushing of the part, and this effect has been used with

variable success as a means of staving off gangrene. It is certain that in the absence of any change in arterial and venous pressure, increased blood-flow to any part of the body can only be brought about by arteriolar dilatation, and where the skin is flushed it is evident that there must be in addition a dilatation of the capillaries and small venules. If, indeed, these phenomena follow periarterial neurectomy it behoves us, if possible, to explain them in terms of our present physiological knowledge. Histological investigation has shown beyond dispute that the arterioles, and possibly the capillaries, are provided with both motor and sensory nerve-endings. Evidence of this was adduced by A. S. DOGIEL in 1898, but the function served by the afferent supply is still somewhat problematical. The efferent terminals are doubtless sympathetic in origin, and it is clear from the work of J. N. LANGLEY that the sympathetic effector neurons (the grey rami) run in the ordinary mixed nerves to the limb. LANGLEY isolated and divided the lumbar sympathetic in cats and stimulated its central end, at the same time observing the colour of the pads of the feet. This experiment was repeated after division of the anterior crural and sciatic nerves, and it was found that the reflex paling which occurred when the crural and sciatic nerves were intact was completely abolished after they had been divided. Taken together with the well-known fact that dilatation of the arterioles and capillaries follows section of these nerves, LANGLEY'S observation shows that the vessels are under the control of sympathetic fibres which run in the ordinary mixed nerves; this control is tonic in nature and is potentially influenced reflexly by afferent impulses from the limb through the sympathetic. Experiment, therefore, seems to negative the suggestion that increased blood-flow to the limb following periarterial nerve section is due to the removal of tonic vasoconstrictor nervous impulses running through this network to the periphery. Should the periarterial network contain a functional preponderance of efferent depressor fibres or of efferent sympathetic vasodilator fibres in a state of tonic activity—a supposition for which there is no experimental justification—section of the network would be expected to give rise to peripheral vasoconstriction.

It is clear, therefore, that a tentative explanation of the clinical phenomenon observed may be more hopefully expected if we direct our attention to the possibility of the nervous network containing afferent fibres. If we may assume for the moment that it does—a possibility which was suggested by LANGLEY in 1923—it seems that the vascular dilatation should be interpreted as being due to the removal of afferent impulses having an excitor action on the local spinal vasoconstrictor centre, or an inhibitory action on the antagonistic vasodilator centre, or a combined action on both. The fibres concerned would thus be afferent pressor in nature. That such fibres exist in the lumbar sympathetic is shown by the experiments of LANGLEY already referred to, experiments which are analogous to those of SHERRINGTON, who found that a reflex rise in blood pressure in the spinal animal was produced by stimulation of the central end of the cut splanchnic nerve. Afferent pressor fibres certainly run in the ordinary mixed nerve-trunks along with depressor fibres, as can readily be shown experimentally by using different modes of stimulating the central ends of the divided nerve. As W. M. BAYLISS remarked, it may be that the depressor fibres in ordinary nerves are afferent fibres from arteries, and are analogous to those of the depressor nerve. He himself showed that section of the depressor in the rabbit is occasionally followed by a rise in blood pressure, and it is to be supposed that if the afferent depressor fibres from the limb vessels could be severed independently of the afferent and efferent pressor fibres, a local vasoconstriction would result. Conversely, section of the afferent pressor fibres would be calculated to produce a local reflex vascular dilatation.

On the hypothesis, therefore, that in the operation of periarterial neurectomy afferent pressor fibres are divided, the resultant effects receive a presumably adequate interpretation. The efferent path would probably be both through the sympathetic—assuming that the tonic impulses passing down it are inhibited—and through the antidromic nerves, whose centres are assumed to be stimulated. We should, therefore, obtain, on the one hand, arteriolar dilatational (sympathetic inhibition), and, on the other hand, dilatation of the capillaries and the small venules in the skin, the latter effect being brought about by the setting free of metabolites by the antidromic nerve-endings, as suggested by LANGLEY. It will be apparent that the interpretation given above of the clinical results contains an undesirably large proportion of hypothesis to fact, and it is equally clear that a complete histological and experimental investigation of the origin, course, and functions of the nerve-fibres found in the periarterial network is urgently required.

SOCIAL REVOLUTIONS AND THE PUBLIC HEALTH.

THE concern widely felt as to the declining birth-rate in this country, with the prospect of a corresponding decline in the actual population, seems to indicate that a rising population is accepted as a good thing in itself. It is true that an increasing body of sociologists are harking back to the doctrines of MALTHUS, and urging the restriction of births as one solution of our post-war problems. It is equally true that some of those who deplore the prospect of a stationary or falling population do so not because they consider the tendency disastrous in itself, but rather as an unfailing index of declining national prosperity and also because of its selective action. The question whether the growth of the population which accompanied the industrial revolution was due to an increase of the birth-rate or any other cause is therefore worthy of attention. We have become so accustomed to the abundant statistical data supplied by various Government departments, that the inquirer who turns his attention to the question of population for the first time is a little surprised to find that the available information on the subject up to the end of the eighteenth century is largely the result of guess-work. In spite, however, of considerable differences in the estimates of different authorities, there can be little doubt that the growth of population in England and Wales in the Middle Ages, although more or less continuous, was very slow. While the population nearly quadrupled itself in 100 years between 1801 and 1901, it took 700 years up to 1760 to accomplish little more than the same proportionate increase. The rate of growth was somewhat accelerated in the eighteenth century, towards the end of which those factors had come into play which accompanied the phenomenal expansion of the nineteenth century.

In tracing the growth of population in the eighteenth century we are largely dependent on such records as exist of the births and deaths which occurred. Curious discrepancies arise from differences of interpretation. Thus, Miss BUER in her recently published work [1] accepts as established an increase in the population of London during the period 1750 to 1801 from 676,000 to 900,000, which she attributes mainly to the falling death-rate. She quotes SHORT'S estimate of the death-rate of London in 1750 as 50 per 1000. According to FARR,[2] who accepted estimates by SIMPSON and PRICE for the earlier periods, the mortality during the non-epidemic periods 1728–37 and 1771–80 was 52 and 50 respectively, but fell to 29·2 in 1801–10. BROWNLEE,[3] on the other hand, confining his attention to the area of the Bills of Mortality of London, and judging by the number killed, the number dying over 60 years of age, and the numbers of abortions and stillbirths, considers that certain quoted estimates of the population showing little increase are justified. He calculates a series of death-rates rising to 37·8 per 1000 in 1721–30, and falling thereafter more or less steadily to 26·9 in 1791–1800. His estimate of the death-rates for periods closely corresponding to those for which FARR thought the rates were around 50 per 1000 are 36·2 and 29·5 respectively. Such rates are obviously of a different order, and it is hard to believe that the discrepancies can be due to the difference of area covered by the Bills of Mortality and London proper. Nevertheless, it appears to be agreed that the death-rate, probably stationary until the eighteenth century, did fall during its greater part, and there is no difference of opinion as to the remarkable decline of infant mortality which took place after the middle of that century. Taking into account a fairly stable number of births, as shown by the Bills of Mortality, the saving of lives, especially among infants, must have been followed by an increase of population which probably found living-room for itself outside the area of which these Bills are the records. There is good ground for believing that the same process was at work all over the country.

This rise of population and the falling death-rate to which Miss BUER attributes it form the text of an interesting survey in her book of the conditions of life in England and Wales in the early days of the industrial revolution from 1760 to 1815. The influence of new ideas in agriculture and market-gardening, new discoveries in industry, progress in medical knowledge and practice, the hospital and dispensary movement, improvement in sanitation and especially in water-supplies, the benefits of inoculation and vaccination are all shown to have raised barrier after barrier against disease at a time which has been impeached as the source of many of the evils that faced the Poor-law Commissioners in and around 1830. So far from being a period of deterioration, Miss BUER shows that the rise of industrialism and its attendant prosperity were mainly instrumental in bringing about an improvement in the health of the people and in their well-being. This is a useful contribution to our knowledge of a period, the circumstances of which have been somewhat overshadowed by the more striking episodes of the post-war times dating from 1815, when unemployment, industrial reorganisation, and cholera epidemics combined to create an impression of the influences of industrialism in harmony with its blatant ugliness. Cholera epidemics were probably no more the result of the rapid growth of towns and overcrowding, than influenza in 1918 was due to the Great War, or the Black Death to any new world movement, or the long waves of measles to circumstances over which human effort has any control. If cholera had come earlier it could scarcely have failed to spread under social and environmental conditions which were even worse than those of the industrial era. On the other hand, one direct result of industrialism and the growth of towns was an increase in the mortality from tuberculosis almost certainly due to the influx of "unsalted" rural dwellers, many from the Celtic fringe, into surroundings woefully suited for the transmission of infection. It is easy to postulate a somewhat similar explanation of the typhus epidemics. After all, the real industrial revolution of steam motive power and machinery had scarcely begun until 1815, and its evil results were not to be looked for till about that time.

There can be little doubt that post-war social distress, followed by rapid urban expansion and improvements of transport, created conditions favourable to the spread both of endemic communicable disease and also of accidentally introduced epidemic infections. A certain resemblance between present-day circumstances and those of 100 years ago—the trade slump following the vigorous industrial development of war-time, unemployment, a lavish Poor-law, fulmination of the comfortable against disgruntled and unaccommodating workers, increased employment of women in industry and commerce, and the radical reorganisation of industrial methods which appears to be impending—may reasonably awaken forebodings of evil so far as the health of the people in the near future is concerned. It is true that the last eight years have seen a rapid fall in the mortality from most forms of disease. There appear, however, to be signs that the decline of tuberculosis is slowing. When we remember, too, that the air-borne infections which we are least able to control, such as influenza, encephalitis, and poliomyelitis, have shown a tendency to fresh vitality in recent years, and that the prevalent overcrowding in dwelling-houses must be favourable to their spread, the possibility of a period of public health retrogression is not entirely remote among that section of the people whose standard of living is gradually being lowered.

[1] Health, Wealth, and Population in the Early Days of the Industrial Revolution. By M. C. Buer, B.Sc., Lecturer in Economics, University of Reading. London: George Routledge and Sons, Ltd., 1926. pp. 290, 10*s.* 6*d.*

[2] Vital Statistics (Memorial Volume), p. 304.

[3] The Health of London in the Eighteenth Century, Proc. Roy. Soc. of Med., September, 1925.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—On Thursday, Dec. 16th, at 5 P.M., Mr. Ernest Clarke will lecture on Emergencies in Ophthalmic Practice, at the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W. This lecture is free to members of the medical profession. A further series of lectures in Emergencies in Medicine and Surgery will be held from January to March, and there will also be a series of clinical demonstrations in ophthalmology and surgery. The Queen Charlotte's Hospital offers practical courses in obstetrics lasting from two to four weeks. Weekly courses in obstetrics and child welfare are undertaken by members of the staff of the City of London Maternity Hospital. The Fellowship can also arrange clinical assistantships at the Samaritan Hospital. The following special courses will be held in January: A fortnight's intensive course in medicine, surgery, and the specialties at the Prince of Wales's General Hospital from Jan. 10th to 22nd; a fortnight's all-day course in cardiology at the National Hospital for Diseases of the Heart, for which the entries are limited to twenty, from Jan. 17th to 29th; a fortnight's course in diseases of children at the Royal Free Hospital and the Children's Clinic, from Jan. 10th to 22nd; a month's course (Tuesday and Saturday mornings at 11 A.M.) in psychological medicine at the Bethlem Royal Hospital from Jan. 11th to Feb. 5th. Copies of all syllabuses of the special courses, of the general course programme, and of the *Post-Graduate Medical Journal* may be had from the Secretary of the Fellowship, at 1, Wimpole-street, London, W.1.

Annotations.

"Ne quid nimis."

THE USE OF PHOTOGRAMS.

ONLY the most original minds can venture to publish the results of their investigations without having a care first to discover what has been already written on the matter to be investigated. For this purpose nothing can adequately take the place of personal search at a well-equipped reference library, but time and distance make this difficult in many cases, and the library of the Royal Society of Medicine has long offered special facilities to its members who live abroad or at a distance by supplying extracts of articles and bibliographies on specific subjects. There are obvious limitations to vicarious reference, and it is somewhat surprising that little use has been made in this country of the photostat which produces on demand copies of articles with their charts, tables, and illustrations in facsimile. The library of the College of Physicians in Philadelphia installed such a machine some 10 years ago to supply Fellows of the College with replicas of pages in books and of articles in journals at a cost in many cases less than that of postage of the original to and from the worker. Use was made of the Philadelphia photostat by applicants in all parts of the United States and even from Great Britain and Germany, and similar facilities have been provided in Washington and Stockholm. The library of the British Museum has recently installed an official photostat, of which readers make great use, finding a photostat copy cheaper than one made by hand. The minimum charge is 1*s.* each for a negative (white on black) 11 × 7 in., a positive (black on white) costing double. Apart from this everyday use the photostat can reproduce completely, and so render more accessible the rare volumes which no library is willing to circulate through the post. The reproduction may have an almost uncanny accuracy and throw off their guard any except the most wary reader. Where permanency is desired it is well to insist on the print being made on bromide paper. The Central Depôt for Scientific Information in Berlin (Unter den Linden 38, Berlin, N.W. 7) now announces that it is in a position to supply reproductions of original scientific literature in its own and other languages in the form of photograms. The price of these for teachers and students has been fixed for the present at 4 pf. per square decimeter—i.e., about 4 in. square—to cover the actual cost, the price for business purposes being 7 pf. Orders should give exact information in the following sequence: author, title, source of original text, kind of photogram desired, whether in the original size or reduced. The price to students appears to work out at the astonishingly low price of about ¼*d.* for a column the size of our own, but it is not specifically stated whether the price relates to the size of the photogram or the size of the article from which the reproduction is made. As this process has already proved really helpful to scientific students, it is to be hoped that its utility will soon be recognised by one or other of the medical libraries in this country, and that the price charged for copies may follow the Berlin example. The danger of the photostat lies in this—that for the sake of economy the purchaser or correspondent obtains a copy only of what appears to him to be the vital paragraph and may lose an equally vital context.

ACIDOSIS AND INSULIN.

POST-OPERATIVE acidosis has long presented an unsolved problem. Both the origin of the harmful acids and the extent to which they are injurious remain uncertain. There is also the problem of the ketone bodies and of those cases of post-anæsthetic toxæmia in which the alkalinity of the blood is diminished without there being any evidence of excessive acidity, or of the presence of acetone, diacetic acid, or ketone. All these conditions are often loosely referred to as acidosis, although it would be better to use the term only where there is actually excess of the acid bodies—not merely diminution of the blood bicarbonate. The two conditions in which these blood states are most prominent are post-anæsthetic toxæmia and the uncontrollable vomiting of pregnancy. The former has lately been investigated afresh by M. Labbé and M. Chevki,[1] and the latter by H. Seidl.[2] The French writers arrive at the conclusion that post-operative ketosis depends on a nutritional disturbance, caused by the anæsthetic, in which functional inefficiency of the liver plays a large part. This is, of course, in line with the theory usually accepted, although it leaves unexplained the occasional appearance of the symptoms after local anæsthesia, and, indeed, after shock independent of any anæsthetic. General interest in the treatment of acidosis has been aroused by the introduction of insulin. On the grounds that there is a pathological analogy between the metabolic defects which lead to acidosis in diabetes and those which cause it after operations or during pregnancy, it is argued that insulin should be used in the treatment of post-anæsthetic toxæmia and the hyperemesis of pregnancy. Seidl claims good results in seven cases of hyperemesis treated, and believes that insulin should be employed in all patients in whose urine ketone bodies are present. The French observers similarly recommend the use of insulin in the post-anæsthetic patients in whom there is not merely diminished alkalinity of the blood, but actual acetonæmia or ketones or extra acids in the urine. The use of insulin after operation has been much advocated in America, but, as we have pointed out,[3] the Toronto group in 1924 stated that "it is difficult to see what purpose it could serve," and cast doubt on the value of insulin "in conditions other than those in which there is a distinct deficiency of insulin metabolism." Insulin, they remarked, is a powerful drug, and should not be used recklessly. The question is to be brought before the Section of Anæsthetics of the Royal Society of Medicine during the current session.

HYDRATED MORPHINE DERIVATIVES.

So little is known of the intimate nature of drug action that it is almost always impossible to foretell at all accurately what will be the result of any chemical substance of known constitution coming into contact with a single isolated reactive tissue. And, of course, it is even harder to foretell the action of drugs on particular functions embodied in the coördinated complexity of the higher forms of life. Experiment, therefore, is the only means at our disposal by which to extend our knowledge of pharmacology and therapeutics, and one of the ways in which progress may be made is by the synthesis and study of derivatives of chemical substances which evoke a known biological response. The action of most drugs on man is by no means localised to the particular tissue whose function we may desire to stimulate or depress. If it were, the foreground of therapeutics would be much more easily penetrable than we find it. It may be hoped, however, that close coöperation between the organic chemist, the experimental physiologist, and the scientific clinician will give us chemical substances whose actions are more elective and which are thus of greater value in the treatment of disease. Advance along these lines must inevitably be slow, but a grain of sound experimental fact is worth infinitely more than a mass of hypothesis based on uncontrolled observation.

The hydrated derivatives of morphine deserve more intense study than they have received, and it is satisfactory to see an account of them contributed by Prof. Erich Leschke to an interesting volume which the firm of Messrs. Knoll and Co. has published to commemorate its fortieth anniversary. The derivatives chosen for investigation were Paracodin (dihydrocodeine), Paramorfan (dihydromorphine), Dicodid (dihydrocodeinon), Dilaudid (dihydromorphinon), and Eukodal (dihydrooxycodeinon). Dihydrocodeine is

[1] Presse Médicale, Oct. 2nd, 1926.
[2] Münch. Med. Woch., Sept. 3rd, 1926.
[3] THE LANCET, 1926, i., 987.

found to be much more active in depressing the coughing reflex than codeine, which, as is well known, is itself relatively more active in this respect than morphine. Dihydrocodeine is also more specifically analgesic than morphine, in that the higher centres of the brain do not show that general depression characteristic of the action of morphine, and its constipating action is much less marked. It may be given by the mouth or subcutaneously. The pharmacological action of dihydrocodeinon occupies a position between those of codeine and dihydrocodeine. Its toxicity is approximately the same as that of morphine, but increasing tolerance is not nearly so marked as with the latter drug, a fact which, according to Leschke, can be readily shown in animal experiments. Dihydrooxycodeinon is more nearly allied to morphine in its pharmacological effects in that its general narcotic properties are well marked; indeed, in this respect it is relatively more potent than morphine, and it has been used successfully in biliary and renal colic. Dihydromorphine has a similar action to that of morphine, but the effect lasts longer and the degree of tolerance developed to repeated injections is said to be decidedly less. Dihydromorphinon exerts its narcotic and respiratory depressant action in doses one quarter to one half that of morphine. Tolerance to the drug appears much less readily, its action on the gut is extremely small, and the danger of habituation is very much reduced. It is clear that if this information can be confirmed and extended by further experiment it must be recognised as a valuable contribution to pharmacology and therapeutics.

POISONS IN SHELL-FISH.

ARSENIC, as was shown in the notorious Manchester beer epidemic, has a way of cropping up in strange places. It has been found, for instance, in certain medicinal preparations of seaweed, notably Irish moss or carragheen, and now Mr. A. Chaston Chapman, F.R.S.,[1] has discovered quite a lot of it in some of the marine crustacea and shell-fish. For purposes of investigation Mr. Chapman estimated the arsenic as parts per million of arsenious oxide in the wet substance. In oysters from British beds this figure was in the region of 6, but in foreign oysters it was sometimes as high as 70 parts per million. In mussels the amount was even greater, sometimes reaching nearly 120 parts per million, a fact which may explain the poisonous symptoms which often follow the eating of mussels and are usually attributed to a poisonous alkaloid called mytilotoxin. The flesh of lobsters, both before and after boiling, yielded about 100 parts per million, but the highest quantity of arsenic, 174 parts, was found in some samples of prawns; this corresponds to over a grain of arsenious oxide per pound of wet edible flesh. Analysis of the sea-water in certain situations has led Mr. Chapman to conclude that "whatever may have been the original source of the arsenic, it is from the sea-water that the organisms dealt with in this communication have derived the arsenic they contain." It is obvious, however, that the arsenic can scarcely exist in any simple form in such quantities as that noted in the sample of prawns, for, if it did, toxic symptoms would be much commoner than they are. As a result of experiment it is thought that the arsenic compound present in the lobster, for example, is a more or less complex organic substance or mixture of substances soluble both in alcohol and in water. Examination of the urine of a person who has been eating shell-fish or crustacea has shown that the greater part of the arsenic is excreted in the urine soon after the food is taken. Nevertheless this would not necessarily prevent the occurrence of acute poisoning, and the problem arises how such quantities of arsenic are prevented, by chemical or physical combination, from exerting toxic effects. It is stated that this problem is being investigated. In the course of the analyses necessary for the determination of arsenic it came to light that in crustacea and mollusca there are also appreciable amounts of lead and copper. The latter is, of course, present in hæmocyanin, a blood-pigment of many invertebrates. It is also surprising to learn that formaldehyde has been found in certain kinds of fish, but Mr. A. R. Tankard and Mr. D. J. T. Bagnall[2] throw some doubt on the technique of this discovery, and at present formaldehyde cannot with any confidence be blamed for poisoning fish-eaters. If it is indeed the arsenic in oysters that is responsible for symptoms it is hard to see how untoward incidents can be prevented. Recent work in America[3] has gone to show that if oysters are contaminated with typhoid bacilli and returned to their natural waters they free themselves from infection in less than 16 days. This shows their excellent intentions, but it is scarcely likely that they could ever be trained to get rid of their arsenic as well.

[1] The Analyst, November, 1926, No. 508, li., 548.

THE THERAPEUTIC USE OF GOLD SALTS.

KRYSOLGAN and sanocrysin have in turn so completely occupied the field in the treatment of tuberculosis during the last few years that we are inclined to forget that the therapeutic use of gold salts is at least as old as Paracelsus. Almost every salt of the metal has been used and almost every disease treated with it. In a recent review Prof. Felix Klemperer and Dr. Alfred Salomon[4] have surveyed the whole field. The modern study dates from 1890, when Koch demonstrated that the growth of tubercle bacilli was inhibited by salts of this metal. Numerous investigators followed, most of them using the cyanides of gold, whilst Bettmann ingeniously tried combining them with tuberculin. Buch and Glück in 1911 introduced a combination of gold and cantharidin, and this was followed by an extensive series of experiments in Germany with the use of various gold cyanide and cantharidin preparations, some of which, such as aurocantan, have received special names. Then followed the work of Feldt with a combination of weak alkalis and complex organic salts of gold, resulting in the discovery of krysolgan and sanocrysin. The mechanism of action of these numerous gold preparations, from the early cyanide experiments to the most recent sanocrysin tests, is obviously far from being properly understood. One fact seems to stand out clearly: the action is not that of a direct destruction of the individual tubercle bacillus, but rather some action of the stored gold salt upon the tuberculous tissue liberating a product which for want of a better name has been called by many workers tuberculin. The use of this term is unfortunate, since there is no evidence that this substance is identical with the exotoxin or endotoxin of tuberculin. At best the assumption is an analogy. Those engaged in the treatment of cases will appreciate the pains which Klemperer and Salomon have been at to collect clinical records from various sources dealing with four of the most recent organic gold preparations—krysolgan, triphal, aurophos, and sanocrysin.

Amongst the numerous investigators who are now publishing their first results of the treatment of tuberculosis with sanocrysin Dr. Knud Secher[5] is entitled to speak with authority, since he was one of the early experimenters associated with Prof. Mollgaard. Dr. Secher remarks early in the book that although "complete sterilisation against tuberculosis" in man—in other words, the destruction of all living tubercle bacilli in an infected person—should presumably be possible, on the analogy of the animal experiments, yet such a result is not desirable. We are inclined to doubt whether such "sterilisation" (the word is hardly, perhaps, admissible to general usage in this sense) is even possible—at any rate by therapeutic treatment—in the majority of cases. But the writer's aim of "clinical restoration as nearly as possible" leaving the small remnants of infection to act as a focus of immunisation is an ideal not only

[2] Ibid., p. 565.

[3] Boston Medical and Surgical Journal, Oct. 28th, 1926, No. 18, cxcv., 884.

[4] Ergebnisse der gesamten Medizin, 1926, Band 8.

[5] Treatment of Tuberculosis with Sanocrysin and Serum. By Dr. Knud Secher, Physician in Chief to the Municipal Hospital, Bispebjerg, Copenhagen. London: William Heinemann (Medical Books). 1926. Pp. 256. 21s.

for those who use sanocrysin, but for all who treat tuberculosis. Dr. Secher follows the classification of tuberculosis into the anatomical forms of exudative, degenerative or necrotic, and productive or proliferative, which has now passed into common use on the continent, admitting that in practice it rarely gives a true picture of the clinical condition. The choice of case for sanocrysin treatment is probably best made on purely clinical grounds of history, signs, and symptoms, with a good radiogram as a backing, and without reference to a supposed pathological picture which may or may not exist. To the actual administration of the drug Dr. Secher finds three useful guides—temperature reaction (four types are recognised), erythema, and albuminuria, and he devotes a chapter to an analysis of all the untoward symptoms met with by various investigators. He agrees that it is not always easy to differentiate between toxic symptoms due to the gold-ion and those due to the liberation of tubercle endotoxin. Possibly the former may be more easily detected now that minute quantities of gold can be estimated in the urine and fæces by colorimetric, electrolytic, or iodometric titration. Although most English workers appear to have discontinued its use, Dr. Secher is a firm believer in the value of antiserum combined with sanocrysin, as originally advocated by Mollgaard. The interest in tuberculosis antiserum revived by sanocrysin investigation may itself lead to useful results. Dr. Secher adheres also to the large-dose method of administration, never using less than 0·5 g. as a start, and aiming at a high concentration of sanocrysin, being guided subsequently by the patients' reactions. Sanocrysin is a powerful drug, and cannot be used without facilities for careful observation of patients at rest in bed and without expert nursing. There is no question of ambulant treatment as in the case of tuberculin. All the necessary precautions have been taken by Dr. Secher, and his records, given in full detail in the book, are a monument of painstaking research. Of the ultimate results he is evidently convinced, for writing of pulmonary tuberculosis he says: "Sanocrysin treatment (when employed in accordance with right indications and carried through with sufficient energy) will in all patients cause an improvement of their condition and will cure a large number. . . ." Dr. Secher has had an extensive experience of sanocrysin and writes with conviction, but his readers may be more reserved in their conclusions.

SPIDER BITES.

IT is well established that some tropical spiders are big enough and poisonous enough to catch and kill animals as large as small birds. But modern observation has wiped out the tarantula myth, nor are there now found in Gascony "spiders of that virulency that, if a man tread upon them, to crush them, their poison will pass through the very soles of his shoes" as was once affirmed. Indeed, the pendulum has swung so far the other way that arachnologists have come to doubt whether spiders' bites ever cause illness in man. However, Dr. Emil Bogen, of Los Angeles,[1] has seen 15 cases in recent years where a characteristic chain of symptoms has followed the bite of *Latrodectus mactans*, a big black spider which has an unfortunate habit of lurking under the seats of privies. The chief symptom is pain, which may occur in any or every part of the body, irrespective of the site of the bite, and is accompanied with restlessness, nausea, dizziness, and other general signs. It is obvious from his description that the patient's complaints might easily be put down to fright if only an odd case was seen; they are, however, repeated with considerable regularity in all the examples which have come to the Los Angeles General Hospital. The pain is often very severe, and requires large doses of opiates to control it. Dr. Bogen has had good results by injecting the serum of convalescent cases. After a few days the patient recovers without any ill-effects. The bibliography is, unfortunately, not printed in the *Archives* "on account of lack of space," so that it is difficult for anyone who is interested to follow the matter up; but in his summary of the literature Dr. Bogen points out that similar poisonings, often from other species of *Latrodectus*, have been repeatedly described in Southern Europe, Russia, Australia, New Zealand, Madagascar, and South America, and there is evidently no reason to doubt that human arachnidism is a reality.

[1] Jour. Amer. Med. Assoc., 1926, lxxxvi., 1894; Archiv. Int. Med., 1926, xxxviii., 623.

ROYAL MEDICAL BENEVOLENT FUND: THE CHRISTMAS GIFTS.

IT has been the practice of the Royal Medical Benevolent Fund for many years to present to the annuitants and some of the most necessitous grantees a Christmas gift. The Treasurer now makes an appeal for £370 to keep up this practice. The committee has not in hand any special fund to draw upon to meet this Christmas gift. The individual sum given, 25*s*., is small, but the recipients are many; in former years they have received this little augmentation of their narrow means and are no doubt looking forward to its receipt this year. It is a friendly act on the part of the managers of the Fund which should not be allowed to cease, and we trust that our readers will make the continuance possible by finding the small sum necessary. Subscriptions may be sent to the Hon. Treasurer, Sir Charters Symonds, at the Offices of the Fund, 11, Chandos-street, Cavendish-square, London, W. 1.

MEDICAL SUPPLIES IN WAR.

THE military authorities of the United States of America are clearly determined not to be caught napping by another war. All officers of the Medical Reserve are told precisely what will be their appointments on mobilisation, whether to hospitals, field ambulances, or as specialists. The question of medical supplies and their replacement is being carefully considered, and so far as surgical instruments are concerned, is discussed by Major R. C. Heflebower, Medical Corps, U.S. Army, in an address to the American Surgical Trade, reported in the *Military Surgeon* for November. The arrangements for providing instruments in war-time are in the hands of a special section of the Surgeon-General's Office, a section which has nothing to do with the present supply. First the section has to decide what instruments will be wanted, and what specifications shall be put forward; it is advised by certain Reserve officers, who are surgical instrument-makers, so that buying shall be done commercially in the best way. Then the quantity of stores wanted must be defined. Ultimately that will be settled by the scale of mobilisation, but at present tentative contracts are put out, and the tenders are advised upon by the Reserve officers, who discuss whether they can be better assigned — whether, for instance, similar contracts for forceps should be given to each contractor, or whether all large forceps should be made by one and all small forceps by another. The third question is, whence shall the instruments be obtained? At first some can be purchased; this will be the work of the Reserve officers, who (having regard to the needs of the civil population) will buy what is immediately available. The rest must be made. The industry, however, may not itself be able to cope with the demand, and it may be necessary to call on workers in associated trades. Thus surgical needles or scissors might be roughed out by other workers and finished by the surgical instrument-makers provided that there were enough skilled mechanics. So as to avoid a shortage the trades can get a lien on the services of mechanics engaged elsewhere, and these men will be scheduled as indispensable. Moreover, the raw material, power, and transport required for this work must all be arranged for in advance by the Assistant-Secretary for War, in the light of the needs of other essential services. It is hoped that working along these lines there will be little industrial confusion in the change from peace

to war, and that the Army will never be held up for expected supplies. The section has also in mind the danger of accumulating a large surplus of stores which, if thrown on the market, must disorganise industry in the difficult post-war days. Such foresight is astonishing.

A VACCINATION INQUIRY.

IN an address delivered before the Berne Medical Club, Dr. A. Hauswirth,[1] the medical officer of health for that city, reports that a committee consisting of two medical men, including himself as chairman, and three laymen, one of whom was an antivaccinationist and the other two opponents of all compulsory measures though alive to the advantages of vaccination, was appointed by the Berne City Council to inquire into the supposed evil effects of vaccination among approximately 40,000 persons who had been compulsorily vaccinated between the spring of 1922 and the autumn of 1924 on the occasion of a small-pox epidemic. Only 14 cases in all were reported to the committee which after a careful investigation found that there were only four cases in which a possibility or probability of a connexion between the disease and the previous vaccination could not be excluded. The first case was that of encephalitis lethargica in a youth aged 17, who developed the symptoms shortly after vaccination, and made an almost complete recovery. The second case was one of fatal septicæmia following measles which occurred in a girl aged 9 years, vaccinated on the third or fourth day of the incubation period. In the third case a girl aged 14, six days after vaccination, developed follicular tonsillitis, followed by fatal septicæmia. The fourth case was that of a boy aged 13, who was vaccinated six days after recovery from an acute gastro-intestinal attack, accompanied by circulatory disturbance. About a week later symptoms of acute septicæmia developed, and death took place. The three deaths, therefore, were due to septic processes, in which the onset of the disease probably coincided with the performance of vaccination. The lesson to be learnt from these cases is that on the slightest suspicion of an acute infective or other acute disease vaccination should not be performed. In conclusion, Dr. Hauswirth remarks that as in only 0·01 per cent., or in 1 out of 10,000 vaccinations, could any evil effect be attributed to the process, the occurrence of such cases is far outweighed by the enormous benefit conferred by the absolute protection against small-pox provided by vaccination.

SAPONIFIED TOXIN IN SCARLET FEVER.

Prof. W. P. Larson, of Minnesota University, attended a meeting of health officers of the State of Ohio in the middle of last month, and gave an account of his method of detoxicating toxin and the results which he has had in producing active immunity against scarlet fever and diphtheria. Two years ago he was investigating the cause of pellicle formation in bacterial cultures, and to test his theory that surface tension rather than the presence of oxygen is the determining factor in this phenomenon, he introduced soap solutions into the culture media. Finding the appropriate concentration of soap, he was able to make all pellicle-forming organisms grow either in the liquid medium or at the bottom of the flask. The critical surface tension above which pellicle formation will always occur he found to be 42 dynes. Non-pellicle formers can be made to form pellicles if they will grow on a glycerine medium, and convert the glycerine into fatty bodies. Incidentally he observed that the tubercle bacillus loses its pathogenicity when grown on low-tension media instead of as a pellicle, and he claims that by using a medium containing soap he can produce in a few days cultures similar to the B.C.G. cultures which Calmette obtains by growing tubercle bacilli in bile medium for 13 years. The soap found most suitable as regards viscosity is a highly purified castor oil soap. These experiments led Prof. Larson to investigate the possibility of obtaining non-pathogenic strains of other bacilli. He was able to give detoxicated pneumococci to rabbits in doses which would have been certainly lethal without the admixture of soap, and he even succeeded in immunising guinea-pigs to tetanus, at the same time bringing evidence to support Ehrlich's theory that the more sensitive an animal is to a given toxin the greater will be its antibody formation in response to that toxin. All bacterial toxins, he found, can be detoxicated by this method without losing their immunising property, the only exception being that produced by *B. botulinus*. The first human volunteers were treated with a 1/10 L. + dose of diphtheria toxin in 1 per cent. castor oil soap, but it was found that the same dose in 2 per cent. soap gave less reaction. The latter mixture was used on 800 medical students, and over 60 per cent. of Schick-positive reactors became Schick-negative within 10 days. Applying the same principle to scarlet fever toxin (Dick), he found that a 3000 skin-test dose could be covered with 2 per cent. soap. This solution causes some reactions in adults, for whom a 3 per cent. soap solution is found to be more satisfactory. This dose immunises 90 per cent. of positive reactors within three weeks, and has been used as a prophylactic in various institutional outbreaks, apparently with success. As a method of prophylaxis it has none of the unpleasant concomitants of passive immunisation with Dochez serum. More recently a combined scarlet fever and diphtheria saponified (3 per cent.) toxin has been used; this is said to cause less reaction than the separate use of two saponified toxins. It should be added that Prof. Larson has been able to recover the toxin from his solutions by adding a simple salt solution, and has thus satisfied himself that there is no truth in the suggestion that the toxin is destroyed by soap. At present he recommends that two doses of the combined toxins be given at an interval of two to four weeks. Five thousand school-children in Minneapolis were given the first dose recently, and there was only one complaint—of a sore arm. The discussion which followed Prof. Larson's address was led by Dr. Roger G. Perkins, professor of hygiene at Western Reserve University, who described the successful use of Prof. Larson's toxin in Cleveland, and uttered a warning against allowing the public to believe that biological methods would ever be successful in 100 per cent. of cases. Dr. Peters described successful arrest of epidemics of scarlet fever in Cincinnati by the use of the same toxin, and other speakers also gave personal testimony to its efficacy in practice. In answer to inquiries about the possibility of obtaining the toxin, Prof. Larson said that he had sent out over 50,000 doses of scarlet fever toxin, and that the present demand was beyond the means of a teaching institution. He has therefore instructed one of the large commercial houses in his technique, and his material will soon be on the market.

THE MEDICAL USES OF RADIUM.

THE stock of radium salt entrusted by H.M. Government to the Medical Research Council is being used at 11 centres, distributed through the country, for the treatment of disease. Every year these centres furnish a report of their activities to the Radiology Committee, appointed jointly by the Council and the British Empire Cancer Campaign, which body has added to the stock of available radium, and on this committee falls the difficult duty of collating the reports—diverse as to manner as well as matter—into a readable account of progress made. This year, in No. 112 of the special report series,[1] which contains reports on cancer of the breast, uterus, mouth, nasopharynx and larynx, œsophagus, rectum, bladder, and prostate, no reference is made to the treatment of rodent ulcer or to non-malignant conditions. The reason given for these omissions is that suitable radiological treatment for the former

[1] Schweizerische medizinische Wochenschrift, Nov. 20th, 1926.

[1] H.M. Stationery Office, 1926, pp. 34, 1*s.* 6*d.*

and for many non-malignant diseases is now well known. The technique adopted by common consent at the centres in the treatment of menorrhagia is also considered to have reached a stage which carries it beyond urgent need of further research. The benefit conferred by radium on those suffering from the leukæmias is now known to be short-lived, the blood picture soon becoming abnormal again. The section of this report which is of most interest is that on cancer of the cervix, since a brief account of the technique used at each of the centres is supplied, and an analysis has been made of statistical data, collected from four of the centres, of patients treated since 1922. Of 214 cases, with few exceptions inoperable, 120 are dead and 36 have not been traced. At a period not less than a year after treatment 31 were alive but not free of disease, while 27 were apparently well. Of 20 borderline or operable cases the corresponding numbers were 4, 4, 6, and 6. From the accounts of technique it is obvious that there is still a considerable degree of variation in the dosage of radium used and in the manner of its application. The introduction of 50–100 mg. into the cervical canal for 22 to 24 hours is a measure common to all except St. Bartholomew's Hospital, where a study of the effects of much smaller quantities acting continuously for six days is being made. Growths which cannot adequately be reached by radium tubes in the cervical canal are treated in some centres by packing applicators round the tissues involved, while others insert needles into the growth, care being taken to avoid proximity to rectum or bladder. In spite of these differences there seems to be more hope of soon establishing a standard technique in cancer of the cervix than in most other regions. Once this has been agreed on, it will be less difficult to ascertain the scope of radiotherapy, and especially to decide whether it should be advocated as a substitute for excision of the growth in operable cases or only as an ancillary measure to prevent recurrence.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CCI.—THE TREATMENT OF CHILBLAIN (ERYTHEMA PERNIO).*

II.—THE MANAGEMENT OF THE CASE.

FROM what was said in the preliminary considerations of the ætiology of chilblains and of those susceptible to them, it will be clear that their treatment must vary according to the type of patient with which one has to deal, and should, whenever possible, be preceded by a thorough physical examination. In particular it is necessary to search for any chronic infection which may be lowering the patient's resistance—for example, tuberculosis of lymphatic glands or other organs, persistent nasopharyngeal catarrh, nasal-sinus disease, septic tonsils, or oral sepsis. There are points about the general treatment of patients with a tendency to chilblains which are applicable to all cases. Unfortunately, however, among the majority these are seldom practicable for social and financial reasons.

Diet and Exercise.

With our modern knowledge of biochemistry and bacteriology—incomplete as it is—the rational rules of diet are so obvious as to be almost platitudinous. Briefly the indications in these patients are:

(1) To modify the diet according to the patient's mode of life; the more sedentary the latter the less should be the amount of carbohydrate taken.

(2) To ensure an adequate supply of fresh food containing mineral salts and vitamins; green vegetables and mixed salads, fruit, particularly apples, wholemeal or Swedish bread with plenty of butter, eggs, preferably raw, milk, cheese, cream, and a moderate quantity of freshly cooked meat and fish should form the basis of a normal diet. With regard to fruit, however, the decalcifying action of certain very acid fruits should be remembered.

(3) In patients with symptoms of excessive intestinal putrefaction the amount of meat and fish should, of course, be reduced to a minimum and the quantity of carbohydrate and fresh vegetables and fruit increased.

(4) Conversely in those with intestinal fermentation and excessive acid production, all soft starchy and concentrated sweet foods must be excluded. The great majority of these patients have been or are being wrongly fed, the common fault being an excess of carbohydrate and a lack of fresh dairy produce and uncooked vegetables and fruit.

It is clear that physical exercise, preferably out of doors, provides the best method of improving a sluggish peripheral circulation, but, of course, the amount taken must be regulated by the patient's physique, and the presence or absence of a chronic infection—tuberculous or otherwise—must be taken into account. Jacquet's biokinetic method of treating chilblains, if conscientiously carried out, is of value. The patient fixes the finger- or toe-joints by forcible muscular effort, and holds them extended in an elevated position for five minutes several times daily.

Sunlight.

Except in rare cases chilblains disappear spontaneously in summer, and are much less common in a cold dry atmosphere than in damp chilly weather. Apart from this, heliotherapy and, to a less extent, artificial light baths are of great value in the treatment of patients with acrocyanosis. I have, however, seen a patient with lupus erythematosus develop chilblains while under intensive treatment with carbon-arc light baths.

The beneficial action of ultra-violet light in these cases is probably complex. It undoubtedly affects the vasomotor system as well as other parts of the sympathetic nervous system—viz., that controlling the pigmentation of the skin, the fibres supplying the hair-bulbs, and those responsible for muscle-tone. Many patients state that after a course of heliotherapy or light baths they "feel the cold" far less. Apart from increasing vasomotor tone ultra-violet radiations act on the endocrine glands, particularly on the thyroid and parathyroids, but also on the ovaries and testes. As regards chilblains it is probable that the action of ultra-violet light on the sympathetic and certain of the endocrine glands is chiefly responsible for its beneficial effect, but its power of raising the calcium concentration in the blood may in some cases be an important factor, and in this connexion it is of interest that the experiments of Grant and Gates of the Rockefeller Institute (quoted by Howard Humphris [1]), appear to show that the parathyroids are more profoundly affected by ultra-violet radiation than the other endocrine glands.

Clothing.

Too little importance is unfortunately attached to the question of clothing by the medical profession, and it is a sad reflection that the emancipation of women from the unhygienic frills and furbelows of the Victorian age lies to the credit of the modern costumier and not to ours. It is high time that our more conservative tailors and hosiers condemned the Eton suit, the heavy tweeds, and winter underclothing to oblivion. Fortunately the system of compulsory games that obtains at preparatory and public schools ensures that boys wear a rational costume for, at any rate, part of their daily life. Needless to say, a patient subject to chilblains should be advised to keep the extremities warm with loose woollen gloves and stockings, but the rest of the clothing should be light and porous, and whenever possible vigorous out-

* An article on the Treatment of Chilblains—I. General Considerations—appeared in this series last week.

[1] Artificial Sunlight and its Therapeutic Uses, Oxford Med. Pub., 3rd edit., p. 71.

door exercise with the minimum of covering should be enjoined, so that the tonic effect of air and sunlight on the skin may be obtained.

Drugs.

The administration of drugs internally for the relief of the chilblain tendency is of far less importance than the prophylactic measures as regards diet, exercise, and sunlight, outlined above. At the same time their temporary use may be of the greatest value in order to correct any abnormal state that may exist in the individual patient under treatment. In the fat type I have found, as a rule, that thyroid gland, which should be pushed until the optimum dose is found, and iodine in large doses, bring about striking improvement if persisted with. The latter may be given as the French tincture (French Codex, 1908) dispensed in a drop-bottle and taken in milk, beginning with 5 drops twice daily and increasing up to as much as 60 drops in divided doses per diem. Symptoms of intolerance must be watched for, and when, as often happens, the patient develops a repugnance for the drug, it should be discontinued for a while. Iodicin, a calcium salt of iodo-ricinoleic acid, or some similar organic combination of iodine may be used as an alternative to the tincture. Colonic stasis is the rule in these patients and should be corrected by the temporary administration of saline or other aperients and liquid paraffin. If there is colonic spasm, belladonna is of course indicated.

It is as a rule in the thin, nervous, *chétif* patient that calcium salts are most likely to be of benefit, but their effect may well be tried in all cases. They are no doubt best given by injection, but for convenience's sake are usually taken orally. Afenil—a calcium chloride-urea compound—is much used on the continent; it is supplied in 10 c.cm. ampoules for intravenous injection, and a course of from six to eight injections at intervals of a few days is advised. For intramuscular injection a solution of calcium chloride, or Crookes Collosol calcium may be employed. Orally calcium lactate in doses of 15–20 gr. thrice daily, preferably about an hour before meals, or the proprietary compound of calcium and sodium lactate known as kalzana are convenient and pleasant to take. There is still considerable scepticism as to the activity of parathyroid gland when given by the mouth, but evidence from independent sources has now accumulated to show that reliable preparations are on the market and that their oral administration does increase the concentration of ionisable calcium in the blood. Cod-liver oil is of unquestionable benefit, particularly in thin patients with a low resistance to infection. Brocq advises a combination of thyroid with pills containing quinine hydrochloride, ergot, and digitalis leaves.

Local Measures.

Local measures for the relief of chilblains are clearly of secondary importance, and it is unnecessary to enumerate the various applications that have been advised. Apart from the biokinetic method of Jacquet already referred to, probably the most efficacious local treatment is by means of galvanic reversals. The patient's hands and forearms are immersed in baths of warm water, through which is passed a galvanic current, the latter being periodically reversed by means of a converted metronome. A course of daily treatments of from 10 to 20 minutes is given over a period of two or three weeks at the beginning of the winter. Another method that often gives remarkable relief is the immersion of the affected parts in hydrogen peroxide 15 vols., diluted with an equal quantity of hot water, for ten minutes, followed by vigorous friction with a rubefacient such as methyl salicylate ointment or spirits of camphor. Ointments containing ichthyol, iodine (e.g., iodex), balsam of Peru or storax are also efficient. In severe cases by far the best preliminary treatment is to put the patient completely at rest in bed, mild antiseptic applications being made to any ulcerated surfaces.

H. W. BARBER, M.B. Camb., F.R.C.P. Lond.,
Physician in Charge of the Skin Dept., Guy's Hospital.

Special Articles.

EPSOM COLLEGE.

AN APPEAL TO PRACTITIONERS.

I ASK every medical practitioner to be so patriotic to his profession as at least to read this letter. Epsom College needs a new sanatorium and isolation block. The existing one is out of date in its accommodation and arrangements, is uneconomical in its working, and affords no facility for the isolation of infectious cases. This purpose, of such paramount importance in a public school, is at present effected by a wooden hut, which is licensed only for a few years more. The vacated sanatorium would, however, with a limited amount of internal adaptation provide excellent residential quarters for at least 40 more boys, and so enable the Council to house some of the numerous applicants whom they have to refuse annually.

Epsom College, as the offspring of the medical profession, should show a sanatorium that would be a model for all other schools to copy. Such an object should appeal to the pride as well as to the philanthropy of the profession, and some £25,000 is a sum that would enable us to gratify both. We cannot hope for many large donations from a profession in which few are rich, but no other profession has more ready access to rich laymen, who may desire to bestow some of their wealth on suitable objects of charity. Here is an object that combines an educational with a philanthropic purpose.

There are over 50,000 practitioners on the Medical Register. Ten shillings from each would provide this haven of rest for the reception of sick sons of generations of medical men, and perhaps for your own. But as experience has taught us that such a unanimous response is not to be looked for in our or indeed in any profession, we ask those who can to send larger donations to compensate for those who send nothing. Annual subscriptions do not even afford the balance required for maintenance, so that for all structural improvements we have to depend on legacies and extraordinary donations. Remember *qui facit per alium facit per se*, and great gratitude will be due to those who can supplement their own gifts by influencing donations from others.

The donor of £10,000 may give his own name, or the name of any person whom he or she desires to commemorate, to the main block of the sanatorium, and the donor of £5000 may do likewise to the isolation block. A large ward may be named for £3000, and a small ward or the casualty department for £1000, while £100 may determine the name of a single bed. Each medical school might well confer its name on a single bed.

This complete scheme should not be beyond the ready accomplishment of the profession with the help of some of those not rare persons who feel that they owe a debt of gratitude to some honoured medical attendant. We can do it, if we have the will to do it, but this condition is an essential prerequisite.

The *British Medical Journal* and THE LANCET of their goodness have promised to publish lists of all subscribers, both small and great, from time to time. I beg you to figure on these lists by sending what you can to the "Sanatorium Fund" to the Secretary at the Epsom College Office, 49, Bedford-square, W.C.1, or to the office of either of the above-named journals to the credit of the Fund.

RAYMOND CRAWFURD,
Chairman of the Council of Epsom College.

November, 1926.

PROBLEMS OF MENTAL DEFICIENCY.

CONFERENCE OF THE CENTRAL ASSOCIATION FOR MENTAL WELFARE, DEC. 2ND-3RD, 1926.

AT the morning session on Dec. 2nd the chair was taken by Sir LESLIE SCOTT, K.C., the President. We were just beginning, he said, to realise that there would always remain a number of defectives who would never enter institutions or who would only spend a few years in them. What was hoped for was effective control of those who were antisocial and unbalanced, leaving for community care those who in the right environment could live a fairly happy and useful life. The community benefited directly by having trained, controlled defectives living in it. He urged the practical development of the handicraft centres, and pointed out that development depended on the right people being in charge. The borderland case was an even more difficult problem; mental defectives formed but a small percentage of that great army of failures of civilisation for whom it was our duty to provide just that additional help which would enable them to help the world. Unlike the defectives, the borderland cases might in the end be made useful and helpful members of society, if proper treatment were begun early and continued steadfastly. Expenditure on this aim would be a real form of national economy.

Miss RUTH DARWIN (Board of Control) then opened a discussion on the

Proper Care of Defectives Outside Institutions.

She pointed out that the number of defectives in our present population based on the estimate of the Royal Commission was 174,000, and that about half of them were in urgent need of care. The total number under supervision of some kind was 53,664, of which 20,297 were in institutions and homes. It was clearly impossible, even if desirable, to segregate the whole defective population. The care required for those who must remain outside institutions was partly in the interest of the individual and partly in that of the community. The speaker had no doubt that most defectives were happier under care; the small group who chafed against control and enjoyed brief pleasures in liberty usually consisted of those whose antisocial and vicious tendencies made them so unfit to manage their own lives that their liberty was sooner or later taken from them by the criminal law. Whether the right of the community to safeguard itself at the expense of the individual should be extended to the enforced segregation of defectives to prevent the procreation of children was a question of fundamental importance which had never been fairly faced. Quite apart from heredity, the chance of the children of defective parents of becoming independent, self-supporting citizens was small. Several statistical inquiries had made it certain that the less skilled sections of the nation were multiplying more quickly than the skilled, and that the full effects on the race were only now beginning to be felt. It seemed a reasonable assumption that a large proportion of the borderland cases of mental defect were to be found in this rapidly reproducing stratum of society, which was therefore a very grave matter. The most immediate and obvious measure to prevent a deterioration in the quality of the race, due to the elimination of natural selection from modern life, was to prevent procreation by persons whose mental defect made them unfit to become parents. There could not be two opinions as to the desirability of relieving future generations as far as possible from the burden of maintaining a group of persons incapable of leading a full life or making any return to society.

Provisions under the Mental Deficiency Act.

The number of mental defectives now ascertained amounted to 55,480, and it seemed justifiable to conclude that in certain areas the existence of large numbers was still unknown to the responsible authority. The non-institutional methods contemplated by the Act were doomed to failure unless their limitations were recognised. Careful discrimination was needed as to the type of case for whom such care would afford sufficient protection. The only safe and humane treatment for defectives with antisocial and immoral tendencies was institutional care. Even the steady-going harmless individual was a danger to himself and others unless favourable surroundings could be ensured. Regular visitation and reports were necessary and must be provided by visitors experienced enough to recognise early symptoms of trouble. Occupation centres provided a most satisfactory means of keeping in close touch with defectives living under guardianship. Lack of recognition of these principles and shortcomings in the working of the Act had resulted in the marriage of 195 adults, the adoption of immoral relations or perverted sexual habits by 252 more, and the birth of 275 children. These figures were serious, and it must be remembered that they related only to cases under statutory supervision. As long as the shortage of accommodation continued, defectives unfitted for free life must be left in the community. Another difficulty was that the officers in some areas were primarily appointed in another capacity and had not sufficient time for this work.

The Marriage of Defectives.

A third difficulty was that there is nothing in the law to make the marriage of a defective illegal or invalid. The speaker suggested that marriage and procreation might be limited under the present Act in the following ways. Full use should be made of the powers under Section II. (2) of the Act, and all cases notified should be provided with a home in a colony or carefully-considered guardianship. Better and more constant supervision by trained visitors should be sought, and lack of parental control leading to sexual irregularities should be regarded as "neglect" bringing the individual under care. Where there was risk of marriage, every effort should be made to get the parents to consent to institutional care.

Sterilisation.

Sterilisation, as a measure supplementary to the Act, deserved the fullest consideration. Cases would have to be selected with a view to each individual's mentality and temperament and the conditions to which he would return, and the consent of the parent or guardian would be necessary. If the danger of procreation were eliminated, a larger number of cases might safely be recommended for release from institutions. There should be great elasticity in the treatment of defectives. The only panacea for mental deficiency lay in a higher standard of human conduct and ideals; in the meantime there was urgent need for the provision of new colonies; better ascertainment, supervision, and training; investigation and experiment into new methods for fuller training of workers; more careful selection of guardians, and coöperation amongst all engaged in practical or scientific work connected with mental welfare.

Dr. A. F. TREDGOLD said that the policy of sterilisation was absolutely wrong in theory; the number of defectives who were the offspring of people who might have been sterilised was infinitesimal. The whole of the available evidence indicated that mental defect was not inherited according to Mendelian law. In practice sterilisation would probably lead to increased sexual irregularity, which meant increased venereal disease. To draw the line would be exceedingly difficult, and the measure would undoubtedly be used as a pretext for delaying the necessary increase in institutional accommodation and for releasing cases who ought to be in homes. The matter had been most carefully considered by people with absolutely open minds, and this was the conclusion to which they had come.

Mrs. HUME PINSENT (Board of Control) said that there could be no two opinions as to the importance of preventing the procreation of mental defectives;

the condition of their children was enough to make the most cynical ashamed of our civilisation; they were the despair of all social workers, since the mother was the irreformable source of all their suffering, disease, and crime. Making marriage void would not prevent the birth of children, and no amount of supervision outside institutions could prevent it either. The subject of sterilisation with consent was one on which much further thought should be expended; it might free some who would otherwise remain all their lives in institutions, and would be a valuable social experiment.

Special Schools.

Any curtailment of expenditure on education meant knocking the bottom out of the Mental Deficiency Act. Notification was the recognised means of linking up the educational and mental health services and the only means of securing proper care for defectives, but it was not properly carried out, as literally hundreds were never ascertained and left school at 14. The local authorities could not deal with them until they were 16, and in this gap many were lost sight of and never heard of again until they appeared in prisons or Poor-law institutions. By that time irrecoverable opportunities had been lost, and there was nothing for them but segregation.

Mr. J. SANDEMAN ALLEN (Chairman, West Lancashire Association for Mental Welfare), in a paper taken as read, said that the Act of 1913 placed upon the local authorities the responsibility of safeguarding the community and the defective by an extension of the existing institutional care and by the introduction of the entirely new method of continuous and lifelong supervision. Only a very few children were so developed by a special school training as to be fit to join normal children; for the majority their costly education was wasted unless they stayed at the school until 16 years of age and received care and supervision throughout and for the following few years. Leaving them to the care of their parents or of an after-care committee was not satisfactory. The responsibility of recommending mental defectives for occupation called for continuous and increasing study.

Meaning and Effectiveness of Supervision.

No definition of supervision was given in the Act, and it was left to the interpretation and imagination of local authorities. The greatest problem to be faced by any voluntary association was how to make supervision in any degree effective. It must take into account the family environment and standard, the degree of defect, and the age of the defective. For a young and deeply defective child in a poor home the aim should be to encourage the mother to train the child in regular habits, decency, and cleanliness, to secure medical treatment for minor ailments and some holiday where possible. For an excluded imbecile, training in a centre should be added to the desiderata. Cases notified for supervision on leaving school, and adults, should be urged to continue some form of manual work in an employment centre, advised as to suitable recreation, and their occupations, if any, investigated as to suitability. The most difficult cases were often those on licence from an institution with a view to discharge. In a careless home they did not get a fair chance. Hostels, as a kind of half-way house between the institution and freedom, and for the ex-special child with an unsuitable home, would be an expenditure that would very soon show itself as an economy. A most valuable aspect of the work of a voluntary association was coöperation with other such bodies. Nevertheless, the hold must be a very loose one, and sometimes totally inadequate, and the defective could only be allowed to go on until he got in trouble with the police or the parental neglect became gross enough for action by the local authority. Occupation centres had been accepted almost universally as an adjunct to supervision, but the older patients could not be retained indefinitely as the younger ones came in. The West Lancashire Association hoped to open a combined club and hand-work class for older defectives.

Borderland Cases.

The most difficult to deal with and possibly the most dangerous of all cases was the hydra-headed class known as "borderland," which ran the whole gamut of social welfare effort and exhausted everyone's patience and resources before being recognised as uncertifiable mental disorder. In their ranks were the potential criminal and prostitute, the incurably vagrant, the young hysteric, the potential suicide and murderer, the neurotic invalid, the emotionally unstable, victims of their temperament and the prey of the unscrupulous. Another similar class was the subnormal criminal who might, perhaps, be sufficiently supervised to prevent a life of crime, but so far no one seemed to have solved the problem. Colony life, at present impracticable, seemed to offer the only hope.

Procreation.

It was a strange anomaly that, while it was illegal for a defective under certificate to marry if in an institution or under guardianship, he became free to do so if discharged. In mental deficiency there was no "cure," and discharge only meant sufficient improvement to warrant the hope of earning a living or some change in the home conditions. It should be made illegal for certifiable defectives to marry. Sterilisation would probably increase the evils of promiscuity and prostitution and still leave the problem of the normal person who is a "carrier" of mental defect.

Dr. RALPH CROWLEY (Board of Education) said that one-fifth of the children in the special schools had an intelligence quotient of over 70 and another one-fifth below 50: roughly one-third of them required custodial care. An inquiry into the after-history of a number of boys showed that one-seventh of them only could be described as unemployable, and that two-thirds were in regular work. They were less restless than normal children, and willing to go on doing donkey-work. It was not true that the special schools were full of children who would be a danger to the State. He pointed out that present methods gave a series of "transverse sections" of the lives of these people, and appealed for long-continued watching, which would give a reliable "longitudinal section."

Dr. H. BURPITT (Newport) pointed out that the appointment of a special officer for mental deficiency work was not always the best way of enlisting the sympathy of the parents, who were apt to get tired of a series of visitors.

Councillor Miss EMILY FORTEY (Leicester) said that parents were apt to evade special schools by sending their children to private establishments, and suggested that this might be stopped if certification under the Mental Deficiency Act could be dispensed with for special schools.

Mr. W. H. FLETCHER (London Teachers' Association) said it was most disquieting to learn that the number of children in special schools had steadily decreased during the last five years, since the numbers of defectives had certainly not decreased. He pleaded with doctors and head teachers not to be loth to send children forward so that they came under statutory examination. Many boys stayed in general schools until they were 13½, and then got certified, but by that time they could never receive the special groundwork and training they needed.

General Discussion.

Dr. R. HUGHES said that in Stoke-on-Trent the gap between 14 and 16 had been bridged by an unofficial notification from one medical officer to the other.

Mrs. EMMETT (Bradford) bewailed the inadequacy of supervision and the helplessness of workers who could only pay periodical visits. Any mental defective without training was likely to become helpless, dirty, and uncontrolled. Occupation centres

alone held out hope, and the patients should be given some small weekly wage and those with unsuitable homes boarded out. For every penny we said we could not afford to-day, the future generation would have to pay a pound.

Miss DARNELL (London Association) spoke of the early difficulties of statutory supervision in her area and the impossibility of getting the trust and coöperation of the parents unless fully trained and sympathetic workers were ready to give individual treatment to each case. Both she and Alderman KATHLEEN CHAMBERS (Bradford) emphasised the great value of and need for occupation centres.

On Thursday afternoon the Right Hon. H. P. MACMILLAN, K.C., took the chair, and a discussion on

Borderland Cases

was opened by Lieut.-Colonel E. GOODALL (Superintendent, Cardiff City Mental Hospital). He said that mental and nervous disorders caused more widespread havoc and misery in the home than any others, but no provision was made for the early institutional treatment of these maladies, and they did not often benefit by the munificence of philanthropists. He quoted the evidence given by Sir F. Mott and himself before the Royal Commission on this subject, and emphasised the need for linking up psychiatry with general medicine (vide THE LANCET, Sept. 11th, 1920). The practical teaching of psychiatry to medical students and nurses in this country was absurdly inadequate. He quoted the Boston Psychopathic Hospital as an ideal psychiatric clinic.

Dr. W. R. K. WATSON (Senior Medical Officer, H.M. Prison, Brixton) said that he thought the subnormal population of this island might safely be calculated as one million. Experiments on prisoners showed that their intelligence did not fall below the general average, although the delinquent group contained a slightly higher percentage of subnormals than the non-delinquent population. Not more than 5 per cent. of subnormals were delinquent; most of them were amiable and harmless, and indeed formed a very useful part of the people, willing to undertake humble unskilled labour. He doubted whether the proportion of subnormals was higher now than it had always been, and thought that in any given family the tendency still was for mental defect to die out. The majority of subnormal delinquents showed not so much intellectual defect as emotional instability, and many of them were unfit for prison discipline. Such cases were always regarded as medical, and were specially treated. While our prisons might not be the best conceivable places for borderline cases, they were the best at present available. The most promising plan for improvement would be to set aside certain prisons for the various kinds of borderland delinquents; a start in this direction had already been made. It was very rare for these people to show shame at the idea of prison: their infirmity automatically mitigated their punishment.

In the subsequent discussion Dr. T. A. ROSS said that the problem would never be satisfactorily solved until every hospital had its mental clinic, and Dr. HELEN BOYLE ridiculed the idea that there was not enough money for the required measures: it was apathy, slackness, and want of understanding that blocked reform. We needed well-informed social workers, good vocational guidance, clinics with beds, and a wider outlook in social service.

Dr. H. CRICHTON-MILLER said that it was time that some central administrative department undertook the responsibility of providing a suitably mitigated environment for the neurotic and the criminal, who suffered from the common trouble of mal-adjustment.

Dr. LETITIA FAIRFIELD said that the statistics published by the Board of Education were quite unreliable, and nobody had any idea how many backward and defective children there were in the country. It was most important to get hold of the mal-adapted child early in its life.

On Friday, Dec. 3rd, the morning session was occupied with a discussion on the Training of Teachers for Special Schools, under the chairmanship of Dr. H. B. BRACKENBURY.

At the afternoon session Sir ARCHIBALD BODKIN took the chair, and opened a discussion on Encephalitis Lethargica and its After-effects.

(To be concluded.)

MEDICINE AND THE LAW.

The Case of Miss Marmion.

IN the note on this case of alleged manslaughter, published last week, it was stated that after the briefest of intervals the jury found the two accused doctors "not guilty," their commitment on the coroner's warrants being, as usual, ignored. It should be added that both the doctors had visited the local police-station immediately after Miss Marmion's death to report the circumstances, and both gave categorical evidence in their own defence. They were asked in cross-examination why they had not given to the coroner the full explanation which they gave at the Assizes, and this point was, naturally, pressed, for the earlier a defence is disclosed, the better impression of bona fides is given. But it must be remembered that a coroner's inquest is a peculiar tribunal. It is a roving inquiry, with no parties to the record, and indeed with no record at all until the coroner's jury has given its verdict. No detailed charge of crime is investigated; there is no definitely accused person, and there are no strict rights of calling witnesses on behalf of any person whose conduct may be reflected upon. When, as in this case, pathological evidence is given at the inquest on behalf of the police, persons who are likely to be accused of crime are reasonably advised to defer defence until they know exactly where they stand. It was mentioned last week that Mr. Justice Branson informed the jury that he entirely agreed with their verdict of acquittal. Legal purists deprecate such expressions by judges on issues of fact which are outside the judicial province; a jury does not require a judge's approval or disapproval of its verdict, and, if approval is to be expressed generally, a judge's silence may carry the imputation of disapproval. But the judicial confirmation in the present case will be gratifying to the acquitted doctors and to the London and Counties Medical Protection Society, by whom their defence was undertaken.

Hospital Refuses Attempted Suicide.

At an inquest held at New Mills, Derbyshire, on Nov. 23rd on a married woman aged 33, who died after drinking lysol, it was stated that she was ordered to be taken to Stockport Infirmary on Sunday, Nov. 21st, the day after she drank the disinfectant. On arrival at the hospital the woman was asked if she took the lysol herself. She replied that she did. The surgeon stated that suicides were not taken into the hospital for treatment and provided a note for the woman's admission to the Shawheath Union Hospital at Stockport. On arrival there the husband discovered that Shawheath was a Poor-law hospital, and declined to allow his wife to be taken in; she was brought home and died a few hours later. The coroner had asked the police to let the authorities at Stockport know that the woman had since died, and to ask them if they would like to attend the inquest. A letter was received from the resident surgeon, stating that they are not allowed to take suicide cases into the hospital for treatment, because the police do not find it possible to allocate to them people who are not responsible for their after actions. Provision had been made for such cases at Shawheath and the hospital authorities had been requested to transfer any cases to that hospital for treatment. This happens in every case, and is one of the regulations of the hospital. The coroner returned a verdict that the woman died from lysol poisoning taken during depression caused by ill-health.

Medical Witnesses and Long Journeys.

At Romford on Monday last, Judge Crawford protested against the time of two medical men being taken up unnecessarily, long journeys being involved, in an action which might easily have been heard in the district in which the accident happened. In the case before the court—a motor collision—the accident occurred near Uckfield, Sussex, and plaintiff, who lives at Eltham, brought the action at Romford as defendant lives within the jurisdiction of that court. To prove his case—which, incidentally, he lost—he called Dr. Cyril Williams, of Uckfield, who is attached to the Cottage Hospital, and Dr. John Higginton, of Eltham. Dr. Williams, before giving evidence, said he would like to know whether he was entitled to reasonable remuneration for his services. In order that he might reach the court at the proper time it had been necessary for him to travel to London on Sunday night, and engage another doctor to carry out his duties during his absence. For this he had just been paid one guinea. The judge said that such a payment was ridiculous. The doctor was entitled to reasonable expenses for all the trouble and inconvenience he had been put to. Counsel for plaintiff said they did not know Dr. Williams had had to travel to London the previous night. He had consulted his clients in the matter. Judge Crawford: "Consulting your clients does not give Dr. Williams much satisfaction. He should be paid proper expenses. I have no power, unfortunately, to order it, but I hope it will be done." Later the judge again referred to the subject. One doctor, he said, had been called from Sussex and another from Eltham, to the great inconvenience of both. There was no reason whatever why the case could not have been tried in a court where the hearing would not have necessitated such long and unnecessary journeys.

COLLOIDAL LEAD IN MALIGNANT DISEASE.

DEMONSTRATION BY THE LIVERPOOL MEDICAL RESEARCH ORGANISATION.

(FROM OUR LIVERPOOL CORRESPONDENT.)

A SMALL but representative and distinguished gathering were present on Nov. 30th, when, for the fourth year in succession, a general demonstration was given of the methods and results of the treatment of malignant disease by the intravenous administration of colloidal lead. Surgeons attended from London, provincial centres, and several foreign schools, while the chemical and laboratory side of the work was submitted to investigation by men eminent in these branches.

The day began at 9 A.M. with a short address by the Director, Prof. W. BLAIR BELL, on the aims and methods of the organisation. This was followed by a demonstration by Prof. ERNEST GLYNN. It was usually very difficult, he said, to decide whether histological changes found in human cancer after lead were due to the treatment, because regression, at least in certain areas, was characteristic of malignancy. In the following case, however, the evidence that lead had produced extraordinary histological changes was conclusive, though associated sepsis might have contributed in some obscure way.

H. A., male, aged 46, had a spheroidal-celled cancer of the breast of 17 months duration excised. Lead was administered immediately afterwards. The total received in 18 days was 0·175 g., the last dose was 0·075 g. 11 days before death. He died from empyema. There were a few metastases in the liver, suprarenals, lungs. Five of these, examined microscopically, showed an extraordinary regression of the epithelial cells; they resembled those of a badly-preserved sarcoma, though the post-mortem was only 30 hours after death. There was practically no "healthy" cancer. The same changes were present in an infected fibrosed lymphatic gland, though less marked, for some of the epithelial cells appeared healthy, even mitoses being present.

The lesser degree of regression in the relatively avascular and fibrosed lymphatic gland indicated, said Prof. Glynn, that the action of lead chiefly depended upon a well-developed and unobstructed blood-supply and perhaps lymph-supply. It was histological evidence of an inherent difficulty in treating cancer by lead or any other drug or by serum.

Prof. W. J. DILLING then spoke briefly on the work carried on in his department to test the toxicity of the various lead suspensions used. All were thoroughly tested on animals. It was found that those prepared by Prof. Lewis had practically no toxic effects upon pulse, respiration, cardiac action, or blood pressure, although even small variations in the technique of manufacture were sometimes followed by serious results as regards toxicity. A series of tracings were shown making abundantly clear the points referred to.

Laboratory Demonstration.

In the Muspratt Laboratory of Physical and Electro-Chemistry Prof. W. C. M. LEWIS, F.R.S., in the course of a brief account of the general programme of work that was being carried out in physical and bio-chemistry, discussed in particular the problem of permeability of tissues from the standpoint of the work of Clowes, and the phosphatide and cholesterol contents of tissues. Emulsification experiments had shown that phosphatides favoured permeability, whilst cholesterol lessened permeability. On this basis, analyses of normal and malignant tissues led to the conclusion that malignant tissues had a raised permeability. Reference was also made to the problem of determining hydrogen-ion concentration.

Dr. M. JOWETT reviewed briefly the subject of glycolysis, and discussed preliminary results that had been obtained on the glycolytic behaviour of rabbit chorion and on the effect of lead on glycolysis.

Dr. H. MILLET described the methods in use of making lead suspensions, and referred to methods of stabilisation.

Dr. J. BROOKS gave an account of work bearing on the fate of the lead suspension in blood, which showed that conversion into lead phosphate ultimately took place.

Demonstrations were then given of the preparation and testing of the lead suspension, as prepared in the Muspratt Laboratory, and of its ultra-filtration and cataphoretic behaviour, together with the methods used in studying glycolysis.

Cases and Specimens.

The party was escorted at 11.15 to the new gynæcological theatres of the Royal Infirmary, where a number of patients were shown. The specimens, where such had been removed, with their microscopic appearances, had previously been exhibited in the obstetric department of the University. Some of these were exceedingly striking, although not necessarily to be taken as examples of cure of malignant disease. For instance, there was a patient with an inoperable carcinoma of the rectum who had had a colostomy done for the disease in September, 1925. Examination by a distinguished London surgeon failed to detect anything abnormal. A point of further interest in this case was that although six months pregnant at the time when lead treatment was commenced, she had gone to full term and been delivered naturally of a healthy child. There was also seen a patient whose breast had been removed for cancer in 1921 and who had had a recurrence, so that in January of this year the condition was regarded as quite inoperable, there being a hard, fixed mass in the pectoral region and some œdema of the arm. She has now got no mass, although the region is slightly tender, and the arm is sensibly softer.

The visitors lunched with the staff at the Exchange Hotel and then adjourned to the Northern Hospital, where Dr. LOUIS CUNNINGHAM, the assistant director of the unit, showed a further series of cases. He then demonstrated and described the various points in the administration of the drug, speaking of its toxic effects, the dosage, and the precautions to be observed. The amount aimed at is 0·6 g. of lead given over

varying periods, the first course being often three doses of 15 or even 20 c.cm. of the 0·5 per cent. solution twice a week. The most careful observation of kidney efficiency and the blood changes is of fundamental importance. Patients are encouraged to return at intervals for further isolated doses, as, of course, the ultimate fate of the cancerous deposits in the body is still unknown.

A large number of patients was then shown at Prof. Blair Bell's nursing home, a few of whom may be briefly mentioned.

1. Malignant teratoma of testes, removed in Australia; secondary nodules in tibia and astragalus. Treatment by lead, followed by operation (16/4/25), foci lightly shelled out. No further symptoms. (0·825 g. of lead.)

2. Mixed cell sarcoma scapula (0·2 g. lead + X rays). Disappearance of growth and glands (3/3/24). No trouble since.

3. Carcinoma in lactating breast. No operation. 0·29 g. lead given 20/10/20. Now perfectly well and breast is functioning.

4. Carcinoma mammæ; inoperable on account of local fixation, January, 1926; full course of lead associated with X rays; now greatly improved and considered operable; microscope = spheroidal cell cancer.

5. Sarcoma small intestine confirmed by section; operation February, 1923, short-circuiting, growth inoperable; 0·45 g. lead: now in good condition.

6. Carcinoma uterus and vagina: uterus removed November, 1924, nodules in vagina left behind, but piece removed for section; nodules in vagina now all gone; 0·69 g. lead.

7. Carcinoma liver and omentum, confirmed by section; 0·28 g. lead, 19/7/23. Now in good health.

The following points were stressed by Prof. Blair Bell. Although many of the cases had received no treatment but lead, he believed that the right course to take at present was radical operation first, where possible, and then injection of lead within a few days. A large number of cases were first seen when their condition was already so desperate as to give no method a fair trial; even some of these had been restored to health. He had had to refuse to treat cases sent from elsewhere without microscopic evidence of malignancy unless he was able to get permission to remove a piece for section himself. The lead preparation, known as "chcriotrope," had, said Prof. Blair Bell, been withdrawn owing to the severe symptoms produced. Arrangements had been made, however, for supplying those centres where treatment was already being carried on. Certain centres had coöperated by sending workers to study the treatment in Liverpool, and one of these was able to report 8 cases out of 49 with disease apparently arrested or very greatly improved. It would be remembered that much the same percentage of success was claimed out of the first 250 cases treated. The total number of cases treated is now about 600.

Impressions of a Visitor.

The impressions left by the day's programme amount to this. A large amount of care and energy is being expended by the Research Association on the study of the effect of lead on the tissues, normal and abnormal, from the pathological, chemical, and toxicological points of view. This work is of a high order and likely to be of permanent value. The Liverpool workers recognise that the therapeutic side of the investigation is still in the experimental stage, and they are making every effort to check varying factors and to establish observed facts. Every facility was offered to the visitors for seeing the scientific activities of the organisation; they were free to handle the specimens and to examine and cross-question the patients. If some of the cases are viewed in an optimistic light, it should be borne in mind that such an outlook is essential if work of this kind is to go on at all; it is for others to supply the keen scrutiny of scepticism. The 49 cases submitted by Prof. Blair Bell form a very remarkable series, and although, taken individually, one might hesitate to pass judgment, taken in the aggregate it is clear that a step forward has been made towards the solution of the mystery of malignant disease, and other workers will have to take into account the results of the treatment with colloidal lead.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Back-strain as a Cause of Incapacity.

To judge from the discussion of Mr. W. A. Cochrane's admirable paper at the Edinburgh Medico-Chirurgical Society last week, the number of true persons who feign back-strain is extremely small; Mr. Cochrane himself could only remember one from his experience in the out-patient department of the Edinburgh Royal Infirmary. People who bring their complaints up to hospital are likely, of course, to be those whose pain is most severe, but Mr. Cochrane made it clear that correct diagnosis must take account of many elements which are not always emphasised. One contributor to the discussion said that during the coal strike he had observed a distinct falling-off in the number of cases of back-strain referred to him, which supports the opinion that the amount of malingering associated with the condition has been somewhat exaggerated. It was agreed that only active treatment on radical lines in the early stages would prevent much genuine disablement later; only too often the treatment of the first stage enables the patient to return to work, but leaves him a ready prey to subsequent disablement on slight strain. This is a very important point, and it is hoped that Mr. Cochrane's views and experience will be more fully discussed. The complicated factors leading to back-strain are now getting to the stage of really scientific analysis.

The Dr. Elsie Inglis Memorial.

It seems only yesterday that I last spoke with Elsie Inglis in Queensferry-street. I see the gleam of triumph in her eye as she told me how at last the Scottish Women's Hospitals were to be accepted, and how she had satisfied "the authorities" down even to the bed socks! Her work in Edinburgh, her heroic adventure in Serbia, her death as she landed from her great crusade, make one of the great stories of the world. It will inspire the future as her vivid presence inspired the past.

When the Scottish Women's Hospitals had done their work the remnant of the fund went to help in building the Dr. Elsie Inglis Memorial Hospital on a beautiful site commanding a view of King's Park, behind Holyrood. The other day this hospital, which is working under full pressure, was visited by a party of Women Citizens, who were charmed with everything about it—building, locality, and outlook—but were given a hint that funds are, or may be, a difficulty and that the number of beds may have to be reduced instead of increased. If this be so, it must be remedied. The hospital's work is in direct continuation of what Dr. Inglis did in Edinburgh from long before the war, and it is a worthy symbol of her adventure. Such a monument cannot be dishonoured and when the day comes to appeal for money the story of this woman, stirring once more the heart of her country, will triumph over every obstacle as she did herself.

A New Hospital for Falkirk.

Falkirk, the centre of the "light castings," has more than recovered from the industrial depression from which it suffered during the war, and a new hospital has been needed for some time. The present hospital has only 74 beds, and there is a waiting list of 400. Not long ago the Duke and Duchess of Montrose joined in the ceremony of cutting the first sod; the families which they represent—Hamilton and Graham—have been bound up with the history of Falkirk for hundreds of years. The new hospital will be built on a site of 12 acres; but, as this is not all available yet, the immediate objective is the provision of 130 beds, later increasing to 250. The institution will be fully equipped as a modern general hospital, but the scheme has one feature of unusual interest. Its promoters are negotiating with the burghs of Falkirk, Grangemouth, and Denny, and with the Eastern

District of Stirlingshire for the provision of a maternity hospital to be run as part of the new organisation, and this is an excellent example of the steadily growing coöperation between voluntary and official medical services. Such coöperation is manifestly in the interest of both. It secures to the hospital the advantage of definite ad hoc income, and to the local health authorities the advantage of a hospital adequate in size and equipment. There is a growing belief that the medical needs of the immediate future will best be served by larger units than the older cottage hospitals, and improved transport makes the use of these larger units possible.

UNITED STATES OF AMERICA.

(FROM AN OCCASIONAL CORRESPONDENT.)

Thyroid Tumours in Bone.

AMONGST papers read at the Clinical Congress of the American College of Surgeons in Montreal was one by Dr. R. Alessandri, of Rome, entitled Thyroid and Parathyroid Bone Tumours without Primary Lesion of the Thyroid Gland. After alluding to the frequent metastasis of malignant thyroid growths of the skeleton, he pointed out that cases had been reported of secondary growth in bones where the lesion of the thyroid gland itself was not to be considered either clinically or anatomically as true thyroid neoplasm, but had all the characteristics of simple colloid or hyperplastic goitre. He believed that there were benign goitres which produced metastasis, although many authors had denied their existence, asserting that the presence of metastasis was a sure proof of malignancy. Most cases were undoubtedly of this type, but he thought that the question was not solved definitely; there were, indeed, cases in which no change in the thyroid was present. He described two cases in which he had operated on thyroid tumours of bone (of which illustrations were shown) without being able to discover any abnormality of the thyroid gland. Neither before the appearance of the skeletal growth, nor during its development, nor after the operation, had the thyroid exhibited the slightest change or enlargement. Neither in those regions of the neck, nor of the tongue, nor where aberrant glands could be found was there anything suspicious which could represent the primary site of a tumour whence the metastasis might have come. It was not, he thought, possible to suppose the presence of a primary neoplasm; even if small it should have been present before the localisation in bone, and ought to have revealed itself before the end of the considerable time mentioned in the reports. Dr. Alessandri, therefore, thought that it must be admitted that bone tumours of the thyroid or parathyroid type could be found without any primary lesion of the normal thyroid gland or of an accessory gland.

Rabies in New York City.

The Health Commissioner of New York City, Dr. Harris, has been drawing the attention of doctors and veterinary surgeons to the question of establishing stations at which dogs may be inoculated against rabies. He is going to propose a regulation to the Board of Health requiring owners of dogs to have them vaccinated against rabies as a condition of receiving a licence, and he has issued statistics showing that in the first six months of this year 200 cases of true rabies were found in an examination of 395 dogs. During a similar period in 1925, 25 cases were found among 152 dogs. The records compiled by the Department of Health from reports made by policemen and hospitals show that during the first six months of this year 7030 persons were bitten as compared with 4077 in the corresponding period of last year. Dr. Harris is anxious to impress on the medical profession the importance of specific treatment for persons bitten by rabid or suspected animals. The immediate reason for his campaign is the recent death from rabies of a boy in the outskirts of New York, but, as a matter of fact, this was an exceptional event. Although rabies in dogs is at present widespread, and large numbers of people are bitten every year, this is the first case of human rabies recorded in the city for more than three years.

Medical Examination of Students at Columbia.

Dr. William H. McCastline, medical officer of Columbia University, advocates annual medical examination of all students, and insists that medical examination should be made carefully and scientifically or not at all. Much harm is being done, he thinks, by careless routine examination, and the present perfunctory investigation is practically worthless. So as to carry out an adequate scheme, he suggests that money be raised to pay the staff of trained and experienced medical men essential to make the examinations properly, and he proposes that a medical service building, with suitable space and equipment, should be put up by the University.

The Hospitals of the United States.

In 1900 there were 2419 hospitals in the United States. In 1925 the total was 7340, with a combined capacity of 814,000 beds, requiring almost a million medical men, nurses, and employees to care for the 12 million patients treated. Having about one-nineteenth of the population of the United States, New York City possesses almost one-twelfth of the country's hospital beds; 134 hospitals are maintained, besides proprietary institutions and hospitals for the care of the mentally diseased. This public service represents an investment of about £40,000,000 in land, buildings, and equipment, and is worked at a cost of more than £8,000,000 a year. About one-third of the investment represents municipal institutions, the other two-thirds being derived from private philanthropy.

Medicinal Alcohol.

In order to prevent the diversion of medicinal whisky from its proper purposes, and in order to replenish and maintain the supplies available for prescription—this requires the distillation of 3 million gallons every year—the Treasury Department of the United States Government has proposed the creation by Congress of a private corporation which shall be a "beneficent monopoly," and shall have authority to buy and own all the medicinal spirits in the country. This corporation, if created, will be the sole source of supply of medicinal spirits from the time of its creation. It will provide for manufacture, under Government regulation, and for distribution of the liquor direct, by American railways express, to retail druggists. At present the medical man is allowed by law to prescribe yearly a certain amount of alcohol for medicinal purposes. It is argued that existing supplies of whisky have been reduced to enough for about five more years, and as whisky must mature for at least four years before being fit for medicinal use, its manufacture for replenishment ought now to be undertaken by the Government. Equally important, say the advocates of Government control, is the fact that existing laws make it impossible for the distribution of liquor to be so controlled that it cannot be used for ordinary drinking. When the Prohibition law forbade its manufacture and sale, some 60 millions of gallons of beverage whisky were left in the hands of private owners, who were authorised to sell it to wholesale and retail druggists for medicinal purposes. It is claimed that the proposed new measure would lead to a very large saving in the administration of the Prohibition law, would ensure the supply of pure whisky for the patient on medical men's prescription, and reduce the cost to the purchaser. It would also abolish many of the abuses inherent in the existing system. Whisky is practically the only form of alcohol prescribed by doctors in this country.

New York Academy of Medicine.

On Nov. 17th a dinner was held in New York to celebrate the completion of the new building of the New York Academy of Medicine in 103rd Street and

Fifth Avenue. About a thousand medical men were present. The opening of the building marks the end of years of striving to find a suitable site for the Academy's home. The main difficulty has been to house the library, which contains 140,000 books, and is said to be the third largest medical library in the world. In the building just opened the books are contained in a separate building, four and a half stories in height, comprising nine floors of stack space with ample room for additions. This has two reading rooms, to seat 180 persons, and is open to all medical students and to medical men who are not members of the Academy. The periodical library alone contains 100,000 pamphlets and 1500 current medical and scientific journals. In the remaining building there is an auditorium with room for 700 people, and offices, lecture halls, and headquarters of medical societies.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH

THE following table gives some of the statistics for 1925 of the City of Manchester and four county boroughs. Dr. A. E. Brindley complains of unnecessary smoke in Derby, and that too little attention is given to its abatement, in view of the high death-rate from chest trouble. If, however, the Lancashire group of towns had had the same respiratory death-rate as Derby there would have been a saving of 1616 lives.

Name of town.	Estimated mid-year population (R.-G.).	Birth-rate.	Death-rates per 1000 of the population.					Death-rates per 1000 births.	
			All causes.	Tuberculosis.	Cancer.	Resp. diseases with influenza.	Heart disease.	Infant mortality.	Maternal mort. from childbirth.
Manchester .	758,235	18·6	14·4	1·56	1·39	3·5	1·5	96	3·2
Salford . ..	244,700	18·8	13·9	1·60	1·20	3·6	1·0	105	3·7
Bolton	180,400	16·3	13·6	1·02	1·33	3·1	1·7	87	4·7
Derby	134,400	18·9	11·9	1·00	1·26	2·2	1·6	74	2·4
St. Helens ..	109,600	23·9	12·0	1·11	0·77	2·9	1·1	100	5·3

Manchester.

Dr. R. Veitch Clark reports that there were 82 cases of encephalitis lethargica, with 24 deaths. He points out that the incidence of puerperal fever has not fallen. There were 179 cases notified during 1925 as compared with an average of 113 for the preceding decennium. Puerperal infection is being treated in Monsall Hospital by lymph drainage of the uterus, and this method is combined with chemotherapy and transfusion of immunised blood for the acute hæmic infections. The results from the lymph drainage treatment were uniformly satisfactory; all the fatal cases except one were desperate from the moment of admission. Attention is drawn to the sharp rise in the respiratory deaths coinciding with the November fogs, and the present position with regard to the proposed regional smoke-abatement committee is indicated. The Ministry of Health is to be asked to make an order forming a joint district. The area will be divided into inspection districts on the basis of 200 to 250 chimneys per district. Each district will be governed by a committee elected from the health committees, and each inspection district committee will elect two members to form the regional council, which will formulate the policy for the whole region. There will be some 20 inspection districts in the region, and at the outset the present executive committee are not prepared to make definite recommendations with regard to the domestic smoke problem. At the end of 1925 a scheme for reorganising sanitary inspection came into operation. The chief change will be the abolition of a number of special inspectors; overlapping and dual visiting will be avoided, and the work of the district inspectors will become more interesting and varied.

Dr. Clark refers to the need for daily clinics for venereal disease, with facilities for intermediate treatment at all times of the day. The unification of clinical control and the provision of maternity beds for pregnant women also require attention. Plans have been approved for the provision of 210 beds at Abergele Sanatorium for the treatment of children suffering from tuberculosis. The report gives much detailed information about methods of treatment adopted at the various hospitals, including experience of the Schick, Dick, and Schultz-Charlton tests, the following up of patients tested with tuberculin during the years 1919 to 1923, the value of the Weiss urochromogen reaction in pulmonary tuberculosis, &c. Lieut.-Colonel J. W. Brittlebank, the chief veterinary officer, reports that the milk supply of 292 farms situated outside Manchester was examined for tubercle and that 8·2 per cent. of the samples were tuberculous. Farmers, he thinks, are getting to understand what is meant by cleanliness, but he is not hopeful of great results until steam sterilisation plant is in general use. The sale of graded milks makes little headway in Manchester. Colonel Brittlebank believes that at least half the milk distributed in Manchester is rendered safe for the consumer by pasteurisation. Dr. Clark shows that the building of houses during the past few years has not kept pace with the natural increase of the population. He mentions three standards for the measurement of overcrowding—viz., the Registrar-General's, of more than two persons to a room; the Manchester standard, of more than two and a half persons per bedroom (two children under ten being counted as one person); and his own, of conditions in houses which prevent the proper separation of the sexes for sleeping purposes. Under the first standard he estimates that 8000 families are overcrowded, under the second 25,000, and under the third 29,000. The total number of families in the city at the time of the 1921 census was 163,939. Dr. Clark's final estimate is that the number of new houses required by the end of 1926 is 17,622.

An account is given of the work of the Manchester Committee on Cancer.

Salford.

Dr. H. Osborne reports the opening of a municipal maternity home and babies' hospital, with room for ten maternity cases and 18 babies. All the maternity cases attend a special ante-natal clinic. The great need of the maternity and child welfare scheme is for better accommodation at the centres. At present there are two primary and seven subsidiary centres. All are inadequately housed, and Dr. Osborne's recommendations include the provision of three primary centres, if possible in the same buildings as school clinics, and six subsidiary centres. It is pointed out that the density of the population of Salford is far greater than that of any other Lancashire town. There is no suitable building land left, and Salford is hemmed in on every side by growing urban districts. There are 3000 people clamouring for houses, but the great majority can never be housed in Salford. Since 1913 the panel practitioners of Salford have been remunerated on an attendance basis. The only districts with a similar scheme are Manchester and the Isle of Man. From Jan. 1st, 1927, the capitation system will be adopted in Salford.

With a view to smoke abatement, the classes for stokers at the Salford Technical College are to be continued. The Health Committee has also decided to abolish the permissible limit of three minutes' dense black smoke in the half-hour and to consider each case on its merits. Dr. Osborne points out, however, that domestic smoke is the more serious part

of the problem, and that "when this country decides that coal must be carbonised before being burnt then smoke inspectors will lose their jobs." He has experimented during the year with fire-brick grates of the well type and dry gas coke from vertical retorts, and finds that this type of coke gives a beautiful radiant fire and heats the room somewhat better than coal and at two-thirds only of the cost. The report gives full details of these experiments, and also of experiments on chemical disinfection, which show that disinfecting power increases directly with the temperature; for example, the same solution of phenol is about three times as powerful a disinfectant at blood heat as it is at freezing point.

The bulk of the milk comes from farms in Cheshire, Lancashire, Yorkshire, and Derbyshire. Of 331 samples from the outside farms 29, or 8·75 per cent., contained tubercle bacilli. This corresponds closely to the Manchester percentage of 8·2. The towns get their milk from similar sources. The tuberculous milks were successfully followed up, as on 26 of the 29 farms visited 30 cows were found with tubercle of the udder. In the three remaining farms cows had been removed between the taking of the sample and the date of inspection. Midwives attended 3445 of the 4597 births, and sent for medical aid in 1428 of their cases. There have been several recent outbreaks of pemphigus neonatorum. Each outbreak has been confined to a certain area, and it has been impossible to trace any cause. From June, 1924, to the end of the year there were 79 cases, with 11 deaths. The disease has been compulsorily notifiable in Salford since March, 1926.

Bolton.

Dr. C. W. Paget Moffatt reports that a scheme for the conversion of the principal sewage works from chemical precipitation to the bio-aeration system at an estimated cost of £74,500 has been approved by the Ministry, and is now in progress. The original intention was to provide four acres of filters for the further treatment of the effluent, but this portion of the work has been postponed for 12 months in order to ascertain whether there is any necessity for this final filtration. For smoke abatement Dr. Moffatt, like Dr. Osborne, pins his faith to smokeless fuel. He draws attention to the prevalent practice of firing the chimneys of dwelling-houses instead of having them swept, thus creating a nuisance to the neighbours "very much worse than that caused by any factory chimney." He wishes the magistrates would take a more serious view of this offence. Bolton's housing problem is exceptional. The population is now the same as it was at the census of 1911, when there were 41,585 houses with 4·34 inhabitants per house. In 1925 there were 44,193 houses with 4·08 inhabitants per house. The population was the same, but there were more and smaller families. It is difficult to say how many extra houses are needed; 1500 applications have been made, but Dr. Moffatt thinks that not more than half of them are genuine. It is waste of time to theorise about the number required. Houses should be turned out in batches of 100, and this process should continue so long as they are absorbed. All the cases of overcrowding to which attention was drawn in 1925 were abated. There are several small unhealthy areas. To deal with these would involve the demolition of 200 houses. There are 1000 back-to-back houses, and the conversion of each pair into one through house would involve the loss of 500 more houses. Street improvements will involve the demolition of a few more. Dr. Moffatt estimates that 800 houses are required to compensate for these three prospective causes of shortage. The public analyst for the borough, Mr. H. Hurst, thinks that the standard for Grade A milk is much too lenient, and suggests a count of 50,000 and *B. coli* absent in 1-10th of a c.cm. Boric acid is still being used extensively. Thus it was contained in five out of eight samples of potted meat, in six out of seven samples of mincemeat, and in all the samples of margarine (13), lemon-cheese (7), cakes (6), and fruit salad (1).

In 1924 there were 40 cases of encephalitis lethargica, with 17 deaths, and in 1925 23 cases, with 13 deaths. During the five-year period ending with 1925 there were 74 cases notified, with the following result according to inquiry made June, 1926:—22 deaths; 1 committed suicide; 5 died from other diseases; 23 made a complete recovery; and 23 are mentally impaired. The attendance of women at the clinic for venereal diseases is discouraged by the inadequacy of the premises. Plans have been prepared for a new clinic.

Derby.

Dr. A. E. Brindley reports that the failure to rid the borough of small-pox quickly was chiefly due to the refusal of the contacts to be vaccinated. Less than 9 per cent. of the persons in the home, who had been in more or less intimate contact with the patient, were vaccinated or revaccinated. There were 746 notifications of small-pox during the year, with no deaths. There were no serious complications except in the case of a baby who lost the sight of one eye. It was estimated in June, 1926, that the epidemic had cost the borough about £15,000. Dr. W. H. Wray, the tuberculosis officer, thinks the results from the treatment of adult pulmonary tuberculosis are so unsatisfactory that efforts should be concentrated on dealing with the children. Although it takes considerable time and persuasion to obtain sputum from children with evidence of bronchial irritation, tubercle bacilli were, nevertheless, found in the sputum of 50 children during 1925. During the past two years Dr. Wray has observed a more virulent type of pulmonary tuberculosis with very rapid lung infiltration. Arrangements are being made for the admission of non-pulmonary tuberculosis to Bretby Hall Orthopædic Hospital. Dr. Wray would like to see allotments provided for tuberculous patients, each with a shelter. If the patients were induced to spend all day on the allotment and to do some gardening under supervision the results, he thinks, would be less costly and more satisfactory than those of sanatorium treatment.

A special clinic was provided in September for the supervision of ailing children between the ages of 2 and 5 years. The total of births was 2527, but only 188 expectant mothers attended the antenatal clinic. There is much overcrowding, although the council have provided 1020 dwellings in the last five years. The demand for Grade A milk has increased from 13½ gallons daily at the end of 1923 to 33¼ at the end of 1925—not a sensational increase. Among suggestions for the future Dr. Brindley includes the provision of more playgrounds for small children, in view of the increasing danger of the streets, and more rapid progress with the conversion of tub closets and privy middens. At the end of 1925 there were still 1968 tub closets and 203 privy middens.

St. Helens.

Dr. Frank Hauxwell shows that his borough is very well supplied with open spaces and parks, but that there are several congested areas which require opening out and replanning. Charts show the decline of the birth-rate from 46 to about 24, and of the death-rate from about 25 to 12 during the last 50 years, and of the infant mortality-rate from 180 to 100 in the last 25 years. The old small-pox hospital has done good service by providing 10 beds for maternity cases and 20 for ailing infants. Arrangements have now been made for the treatment of maternity cases at the new maternity block of the St. Helens (Voluntary) Hospital, which has 15 beds, and for the ailing babies to be treated at the isolation hospital. Progress in the reduction of the shortage of houses is very disappointing. Since 1914 the population has increased by 8825, but only 880 houses have been built. An orthopædic scheme has been approved. Besides an orthopædic centre in St. Helens, six beds will be subsidised at the Liverpool Children's Hospital and six at the open-air hospital for children at Leasowe.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDING NOV. 27TH, 1926.

Notifications.—The following cases of infectious disease were notified during the week: Small-pox 313 (last week 353), scarlet fever 1985, diphtheria 1185, enteric fever 51, pneumonia 1031, puerperal fever 49, puerperal pyrexia 140, cerebro-spinal fever 9, acute poliomyelitis 55, acute polio-encephalitis 6, encephalitis lethargica 61, continued fever 1, dysentery 6, ophthalmia neonatorum 154. There were no cases of cholera, plague, or typhus fever notified during the week.

The total number of cases of acute poliomyelitis and polio-encephalitis taken together—namely, 61—is again substantially higher than the previous week, 10 cases having again been notified from the County of London, all of them on the south side of the river, 5 from Leicestershire (Leicester 3, Hinckley and Ashby-de-la-Zouch 1 each), 3 from Notts (Nottingham 2, Stapleford R.D. 1), 4 from Surrey (four separate districts), 5 from Warwick (Birmingham 3, Coventry 1, Rugby R.D. 1), 3 from Wilts (Salisbury 2, Tisbury R.D. 1), 3 from Yorks West Riding (Conisborough 1, Harrogate 2), 3 from Glamorgan (Cardiff 1, Merthyr 1, Neath R.D. 1), the remainder in ones and twos from many other counties. (Any return from Rutland is missing.)

Of the 313 cases of small-pox, 250 were reported from the county of Durham (the chief areas being Brandon and Byshottles 60, Crook 12, Hetton 12, Jarrow 16, Shildon 11, Willington 27, Chester-le-Street 25, Lanchester 34, Sedgefield 11), 10 from Northumberland, and 46 from Yorks West Riding (Sheffield 14, Mexborough 16, and small numbers from eight other areas).

Deaths.—In the aggregate of great towns, including London, there was no death from small-pox, 4 (1) from enteric fever, 8 (0) from measles, 4 (1) from scarlet fever, 22 (4) from whooping-cough, 46 (16) from diphtheria, 69 (17) from diarrhœa and enteritis under 2 years, and 52 (8) from influenza. The figures in parentheses are those for London itself.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Comdr. G. D. Bateman is placed on the Retd. List with the rank of Surg. Capt.

ROYAL ARMY MEDICAL CORPS.

Capts. G. D. Yates, F. M. Lipscomb, H. P. Rudolf, and D. N. Macleod to be Majs.

Temp. Capt. J. F. P. Gallagher relinquishes his commn. and is granted the rank of Lt.

TERRITORIAL ARMY.

Col. A. D. Ducat to be Hon. Col. 56th (1st Lond.) Div.

Lt.-Col. (Bt.-Col.) F. Darlow from the Gen. List, R.A.M.C., to be Col.

Capts. I. H. Lloyd-Williams and W. L. R. Wood to be Majs.

Capt. (Prov.) G. A. Fisher is confirmed in his rank.

Capt. G. T. Symons (late R.A.M.C.) to be Lt. and relinquishes the rank of Capt.

ROYAL AIR FORCE.

Flight Lt. G. R. Hall relinquishes his temporary commission on ceasing to be employed.

RESERVE OF AIR FORCE OFFICERS.

W. G. Weston is granted an honorary commission as a Flight Lt.

INDIAN MEDICAL SERVICES.

To be Temporary Lieutenants.—Parduman Singh and Mangalore Narasimha Pai to be Temp. Lts.

Lt.-Col. J. E. Clements on return from leave to resume charge of his duties as Inspector-General of Prisons, United Provinces. Lt.-Col. C. E. Palmer, Officiating Inspector-General of Prisons, United Provinces, is posted to Allahabad Central Prison as Superintendent. The services of Dr. Muhammad Umar, medical officer, Central Prison, Allahabad, are placed at the disposal of the Inspector-General of Civil Hospitals, United Provinces. Lt.-Col. R. F. Baird, civil surgeon, Allahabad, to officiate as Inspector-General of Civil Hospitals, United Provinces. Dr. B. K. Mukharji, Provincial Medical Service, medical officer in immediate charge of the Colvin Hospital, Allahabad, to officiate as Civil Surgeon in addition to his own duties. Lt.-Col. R. F. Baird, Officiating Inspector-General of Civil Hospitals, United Provinces, has been nominated by the Governor to be President of the United Provinces Medical Council.

Correspondence.

"Audi alteram partem."

SPIRITUAL HEALING.

To the Editor of THE LANCET.

SIR,—We the undersigned medical members of the Archbishop of Canterbury's Advisory Committee on Spiritual Healing should be grateful to any medical practitioner who could supply us with information regarding patients who had received benefit from spiritual healing, whether through an organised Mission of Healing or individually. We appreciate that names could not be given without the permission of the patients concerned and, although we should like to have them where consent is given, we should nevertheless be glad to receive any information which can properly be supplied, as the desire of the Committee is to collect evidence as to the value of spiritual healing and the type of person most likely to be helped by it. Letters may be addressed to any of the signatories.

We are, Sir, yours faithfully,
WILLIAM BROWN,
H. CHARLES CAMERON,
J. WALTER CARR,
W. MCADAM ECCLES,
PERCIVAL H.-S. HARTLEY,
Dec. 6th, 1926. MAURICE CRAIG (Hon. Sec.).

GANGRENE OF THE TOE.

To the Editor of THE LANCET.

SIR,—There is no surgical affection which demands less surgical intervention than the gangrenous toe of a senile or degenerate subject. The term operation should be forgotten in all cases in which after a few days' tentative treatment the gangrene shows a tendency to remain at a standstill, indicating that there is still some circulation existing just proximal to the lesion, and it may be taken as certain that any kind of local traumatism including chemical irritation will be detrimental to Nature's efforts to form a line of demarcation.

Everything possible should be done to raise the patient's power of resistance by nutritious food with discreet use of alcohol, by (when feasible) continuous soiourn in the fresh air, with limb enveloped in wool and crêpe bandages comfortably placed in a well-padded wire cradle, with footpiece at right angle, and elevated in a Salter swing in a bed in which an electric heating cage may be placed at convenience.

During the initial period, when the gangrene is moist, bathing three times daily with non-irritant disinfecting lotions such as warm peroxide (1 in 17), warm carbolic (1 in 70), plus warm corrosive sublimate (1 in 3000) fomentation (without any impermeable dressing) is very helpful. Later, when fœtor and discharge have ceased, and the part appears mummified, painting daily with tinct. benzoin. co. has proved useful, and afterwards when the "sappers" have (with output of serum) established their trench proximal to the line of gangrene, weak boric foments have been found a satisfactory dressing until the involved phalanx becomes sufficiently detached so that with gentle manipulation it may be extracted with forceps like a loose tooth. Having reached this favourable stage there must be no attempt to hasten convalescence, the limb should be kept in absolute rest on splint until the stump has firmly healed. The internal administration of opium in these cases is time honoured; 1 gr. of codeia three times daily appears helpful, and digitalis with strychnia may prove a useful addition.

All this applies solely to cases of gangrene with obvious tendency to limitation, and to those not handicapped by any grave form of general toxæmia. In the latter there is only one chance—viz., amputation through lower third of thigh, and the sooner it

is performed the better. In those cases in which Nature is unable to isolate a dead toe, it may be reckoned as fact that *any* operative intervention at the primary lesion or between it and the main arterial trunk is a waste of time.

I am, Sir, yours faithfully,

Buenos Aires, Nov. 10th, 1926. JOHN O'CONOR.

MEDICAL SCHOOLS AND THE LONDON UNIVERSITY BILL.

To the Editor of THE LANCET.

SIR,—In the Committee stage of the University of London Bill last Thursday, the Government added an amendment which has the practical effect of exempting any theological college which desires exemption from the operation of the regulations proposed regarding the selection of teachers in schools. I regret that the medical schools had not thought it worth while to ask for the same privileges. I cannot think that the medical schools will appreciate the necessity of submitting appointments of their medical and surgical staff to the new Council of the University, upon which they may have no representation whatever, and which will be largely a body unfamiliar with the special needs of hospital schools.

Sir Wilmot Herringham, in his interesting letter to you, thinks that nothing is to be feared from the Crown and the London County Council representatives, and it is the fact that they have not, with one or two exceptions, hitherto taken a very considerable part in the activities of the Senate. I submit, however, that the position will be totally changed with the representation of these bodies increased fourfold, as it will be, upon the future Council of the University. Surely the genesis of the Departmental Committee itself, as an offspring of the Haldane Commission, makes its recommendations rather more significant than they otherwise might be. It was frankly the aim of the Haldane Commission to introduce State control of the University upon the German pattern, and to this end they provided a representation of six members of the Crown and the London County Council out of 15 upon their supreme executive body which they called the Senate. Exactly the same proportional representation of these interests is reproduced by the Department Committee Report. We are, I think, likely to get under these circumstances an entirely new type of representative from the Government and from the London County Council. The future Council will have the only real power in the University. The proportion of educational representatives will, as Mr. Lees-Smith plainly stated in his Minority Report, allow of only a bare majority of Senatorial representatives, and if there is any disagreement between such representatives, the outside members, as one may call them, will exercise a very real control.

Sir Holburt Waring, I think, takes a wiser standpoint than Sir Wilmot Herringham, in the objection he makes to the preponderant academic representation upon the Senate. He is reported to have declared as his opinion that "There are too many academic representatives on the Senate, and they will quarrel among themselves as to how the spoils are to be divided." I find it difficult to understand why Sir Wilmot Herringham should consider the future Council any more impartial than the present Senate, more especially as with the composition of the new Senate and the very preponderant influence of the collegiate representatives, it is inevitable that a large number of heads of colleges will be members of the future Council, and we shall again have the anomalous position that members of the Council will have to decide questions in which they themselves are financially interested on behalf of their colleges, and the "dog-fight" that Sir Holburt Waring foresees cannot fail to occur.

I am, Sir, yours faithfully,

E. GRAHAM LITTLE.

Wimpole-street, W., Dec. 6th, 1926.

SUNSHINE MEASUREMENTS.

To the Editor of THE LANCET.

SIR,—May I draw your attention to a confusion of terms which may lead to a confusion of thought. The *Times* of Nov. 25th, referring to the weather of the 24th, speaks of "Sunlight (ultra-violet rays) figures" at Kingsway 0; at Ventnor 5½. These measurements were made with an acetone-methylene-blue colour test which does not react to light rays, only as is claimed to ultra-violet rays. These, I submit, should not be called sun*light*, but the sun's ultra-violet rays. Why on the 24th there should have been none at Kingsway I know not; here at Putney it was bright sunshine all day long, but at Ventnor there were 5½ units. This brings me to another point. How many units is the maximum for Ventnor in November? From the *Times* of Dec. 22nd, 1924, I infer that the maximum for July is 24; but we might be told. Nov. 25th, 1926, was a very foggy day; there was no ultra-violet light at Kingsway, or at Lowestoft, and only 2 units at Ventnor. On the 26th we were given the hours of sun*shine* on the 25th at various health resorts. These resorts advertise their hours of sunshine, and perhaps we shall have Ventnor advertising its ultra-violet "light" as much more important than sun*shine*.

Ultra-violet light is said to play an important part in ordinary photography; a lens may stop it to some extent, but it is possible to take photographs through a pinhole without a lens. Photographers have their own strips of sensitive paper for testing the light, but they are not standardised. The rapidity of plates is standardised by the Heuber and Driffield method. There are five million elementary school-children in England, and as far as preventive medicine is concerned most of them are dependent on the rays of the sun, so these rays are fairly important.

I am, Sir, yours faithfully,

WALTER EDMUNDS

Putney, Nov. 26th, 1926.

*** We agree with Mr. Edmunds that the figures are unintelligible to the reader when no standard of comparison is given. There seems little doubt that a sunny day in London may give no reading at all on the Leonard Hill test meter.—ED. L.

THE TREATMENT OF FLOUR.

To the Editor of THE LANCET.

SIR,—I have just read the letter of Mr. W. Jago in your issue of Nov., 13th, in which he traverses certain statements by Mr. G. D. Elsdon, public analyst, on the above subject. It appears to me that Mr. Jago misses the main point in this all-important matter of the adulteration of one of our staple articles of food. Persulphates and other chemicals are foreign additions to flour, and whatever their bad or supposed good qualities, they constitute, when added to flour, substances which render this food *not of the nature of flour*. At the very least, therefore, the public is surely right in demanding that the presence of all such foreign substances should be declared to the purchaser, and the public analyst is doing good service to the community in guiding public opinion on this question. I know of no clearer rights that the consuming public should have, if indeed it does not possess them, than the right to a normal article, coupled with the right to demand that it shall know what it is buying. This right of the consumer has now been conceded, in the case of preservatives, by the new Preservative Regulations, and it is an eminently reasonable thing to ask for its extension to the whole range of foods, but especially to that staple food—flour—which is in daily use in every household in the form of bread.

I am, Sir, yours faithfully,

ARNOLD R. TANKARD.

The City Laboratories, Hull, Dec. 1st, 1926.

THE DISSOLUTION OF INSULIN.

To the Editor of THE LANCET.

SIR,—In view of Dr. R. D. Lawrence's interesting letter I am pleased to give to readers of THE LANCET a few more details of my recent work.

Commercial insulin seems to be composed of at least three substances—viz., the true pancreatic hormone A, the anti-insulin B, and co-insulin C. Of these substances A and B have been obtained in crystalline form, while the work on the substance C is only now nearing completion, and cannot be reported on at present.

Substance A, as Dr. Lawrence rightly states, acts on rabbits according to their fasting blood-sugar levels. It increases the blood-sugar generally in those with a low level and decreases it in those with a high level. In over 20 cases of diabetics, treated so far in Warsaw clinics and elsewhere, it could be ascertained that the substance A acts like the old insulin. It is too early, however, to state whether the new substance presents any disadvantage or advantage over insulin, but since it is free from the very toxic substances contained in commercial insulin the latter should be the case. In non-diabetics, on the contrary, the substance A causes either no change in the blood-sugar or appreciable increase. One exception was noted here; this was a case with normal blood-sugar level, but with sugar in the urine one week before injection of substance A. This interesting result suggests, perhaps, that the substance A might be used with success for diagnostic purposes, like the known sugar tolerance-test, but it might be of more value to the physician than the latter.

One word more on the puzzling behaviour of substance A in diabetics and non-diabetics. My present explanation is that in non-diabetics there is lack of substance C (co-insulin), without which, perhaps, the substance A cannot act, or a superfluity of substance B (anti-insulin). In diabetics, on the contrary, there is too much of B (anti-insulin) and sufficiency of C (co-insulin). I am conscious, however, that this interpretation may have to be modified. Similar explanation can be put forward in Dr. Lawrence's interesting results (using ordinary insulin) on the blood-sugar increases in normal rabbits (which, personally, I never encountered with good insulin). In such cases the effect of insulin might depend on the ratio of substances A, B, and C in the preparation used, and on the equilibrium of these three substances in the animal itself.

I should like to take this opportunity to offer, for purpose of investigation, small quantities of my crystalline substance A to the clinics in Great Britain.

I am, Sir, yours faithfully,

CASIMIR FUNK.

The Biochemical Department, State School of Hygiene, Chocimska 24, Warsaw, Poland, Dec. 4th, 1926.

THE SUPPLY OF ARTIFICIAL LIMBS.

To the Editor of THE LANCET.

SIR,—We agree with the opinion expressed by Mr. Muirhead Little in your issue of Dec. 4th as to the importance attaching to the inspection of artificial limbs by a surgeon who has had experience in such work, and we noted with interest his suggestion to establish a small limb-fitting centre in Central London. At present it is the practice in hospitals for the surgeon to inspect the various limbs supplied, and it is of great assistance to the limb-maker that the surgeon who performed the operation and knows the case should consult with him as to its special needs. The inspection of finished limbs by the surgeon affords the limb-maker opportunity of demonstrating the construction of the particular limb, and of receiving from the surgeon suggestions dictated by his knowledge of the individual circumstances of the amputation. Our experience is that orthopædic surgeons are much more conversant with this subject now than in years gone by, and in cases supplied directly through hospitals or charitable institutions retaining the services of orthopædic surgeons there is little danger of unsuitable limbs being supplied. It would, however, undoubtedly be a boon to other civilian amputees if some plan existed by which the patient could enjoy the combined skill of surgeon and limb-maker, although we doubt whether the number of cases would warrant the establishment of a fitting centre. At the Queen Mary's Convalescent Auxiliary Hospital, Roehampton, the fitting is restricted to one or two firms, and the patient does not have a perfectly free choice of artificial limb. At Roehampton it is not possible to secure the services of surgeons who are free from the restrictions of Government contracts.

We are, Sir, yours faithfully,

W. R. GROSSMITH, LTD.

12, Burleigh-street, Strand, W.C., Dec. 6th, 1926.

CYCLIC VOMITING.

To the Editor of THE LANCET.

SIR,—In your issue of Dec. 4th appears an annotation under this heading, in which, after some introductory remarks—not, I think, representing current pediatric opinion very accurately—we are introduced to the views of an American radiographer who has found in children suffering from this disorder a high proportion of "ptosed stomach" and of "elongated colon." Perhaps a more suitable text for commentary might have been found in the valuable paper by Graham and Brown in the current number of the *Archives of Disease in Childhood*, in which references will be found to much of the recent work on ketonæmia, ketonuria, and ketogenesis—work which has shed a flood of light on the whole question, and to which no reference is made in your article.

All children—and quick, eager, excitable children, with a high metabolic rate, more than others—respond to certain forms of stress, to infection, to starvation, to great exertion, to excitement, to anæsthesia, and to a diet with a high proportion of fat and a low proportion of carbohydrate, by the development of ketonæmia, with diminution in the alkaline reserve of the blood, and a transitory fall in the blood-sugar. In practice it is apparent that these are precisely the factors which determine an attack of so-called cyclical vomiting in susceptible children. Especially the factor of infection is of importance. The ordinary cold running through a nursery will determine a simple rhinitis in the rest of the children, in the child so pre-disposed the underlying infection will be obscured by a typical "sick attack." Yet it may be that a precisely similar disturbance is produced by the stress of an examination or by a long railway journey.

In the administration of glucose, with or without insulin, we have in our hands a treatment which is on the whole strikingly effective. In prophylaxis some consideration, and it may be some modification, of the balance of fat and carbohydrate in the diet is very necessary, although not more necessary than the extirpation of any source of recurrent infection, whether, very rarely, in the appendix, or, very often, in the tonsils. The response of different children to comparable infections is very various, and the metabolic component of the disturbance, and the infective component, are often inextricably intertwined.

Recent studies in metabolism have shown that the normal child possesses the power of drawing largely upon its own carbohydrate reserves to complete the oxidation of the fat in its diet, thus metabolising a mixture very different from that ingested; and it would seem that in the child with cyclical vomiting this power is less evident. The tendency to "cyclical vomiting" is to be explained by some fault in carbohydrate metabolism, although we are still ignorant of the precise nature of that fault. I think we may take it that the length of the colon is of less significance.

I am, Sir, yours faithfully,

H. CHARLES CAMERON.

Devonshire-place, W., Dec. 6th, 1926.

RESEARCH AND MEDIOCRITY.

To the Editor of THE LANCET.

SIR,—In your excellent account (THE LANCET, Nov. 27th, p. 1113) of the Society of Medical Officers of Health meeting to discuss research work in preventive medicine I am reported as saying: "The man who depended on research for his initiative was not likely to achieve more than mediocrity." My actual words were: "Unless a worker has initiative of his own, and thinks for himself, I doubt the value of his work. Anyone dependent on advice for his actions will never achieve anything beyond mediocrity."

I am, Sir, yours faithfully,

Paignton, Dec. 4th, 1926. E. WARD.

Medical News.

UNIVERSITY OF LONDON.—Prof. H. R. Kenwood Sir William Simpson, and Sir Holburt Waring have been nominated Governors of the London School of Hygiene and Tropical Medicine.

UNIVERSITY OF DUBLIN, SCHOOL OF PHYSIC, TRINITY COLLEGE.—At recent examinations the following candidates were successful:—

FINAL MEDICAL EXAMINATION.

Part II., Medicine.—Edward G. Montgomery, Margaret H. Donaldson, Edmund P. N. M. Early, John C. T. Sanctuary, Menzies L. M'Cauley, Silver M. E. Deane-Oliver, John B. Patrick, Desmond Blewitt, Rachel E. Porter, James J. FitzGerald, Robert Kahn, Solomon Gurevich, John O. Bennett, Henry A. Ferguson, Robert A. J. Holmes-Ievers, John Quigley, Geoffrey D. Edwards, Charles F. M. Wilson, Myer Hoffman and Kathleen R. Byrne.

Surgery.—Victor St. G. Vaughan, Lionel B. Somerville-Large, Edward H. Harte, Victor G. Horan, Arthur J. Conlin, Stella C. Ross, Annette K. Wood-Martin, Edmund P. N. M. Early, Edward W. Bingham, Edward G. Montgomery, Arthur N. B. Odbert, Norah M. Smith, Arthur R. Gray, Andrew E. A. O'Byrne, John B. Patrick, Daniel A. O'C. Quinlan, Edward A. Ellis, Rachel E. Porter, Wilhelm F. Knobel, Gladys L. Craig, John Johnston, John J. O'Dwyer and Charles F. M. Wilson.

Midwifery.—Wilfred F. Lane, Lenox R. S. MacFarlane, Robert S. F. Hennessey, Thomas C. M. Corbet, Shirley D. K. Roberts, Wilfreda D. C. T. Pigott, Gilbert M. Smith, Isidore Isaacson, Patrick Brangan, George H. Henry, John H. Stephens, Maurice F. N. Griffin, Charles L. Day, Christina M'Donald, Ethel M. Weir, Louis R. Brumberg, Hubert C. Weir, George M'Donald, Samuel R. Elmes, Daniel M. Briuk, Albert Sachs, Thomas J. O'Reilly, John O. Bennett, Andrew C. C. Charles, Samuel B. Dalrymple, Norah W. Brown and Cecil F. Cope.

Master in Obstetric Science.—Frederik W. Pienaar.

BOARD OF CONTROL.—The address of The Board of Control (Lunacy and Mental Deficiency) England and Wales has now been changed to Caxton House West, Tothill-street, Westminster, S.W.1. The telephone number is Victoria 8540.

THE Eighth Edition of Treves's "Surgical Applied Anatomy," revised and enlarged by Prof. C. C. Choyce, is announced for early publication by Cassell and Co. Ltd. It includes a number of new illustrations.

ROYAL INSTITUTE OF PUBLIC HEALTH.—The next congress of the Institute will be held at Ghent, in Belgium, during Whitsuntide (June 1st–6th), 1927. Delegates have been invited from the governments, municipalities and universities of Belgium, France, Italy, the United States of America, and other countries. The five sections will be devoted to: State Medicine and Municipal Hygiene; Naval, Military, Air, and Tropical Diseases; Industrial Hygiene; Pathology, Bacteriology, and Biochemistry; and Women and the Public Health. Special arrangements have been made for travelling. Full particulars may be had from the hon. secretaries of the Congress at 37, Russell-square, London, W.C. 1.

THE LATE DR. A. H. BUTCHER.—Dr. Arthur Herbert Butcher, who died suddenly on Nov. 25th, at the age of 71, had practised in Birkenhead for nearly 40 years. Born at Ripon, he was the eldest son of the late Major-General Arthur Butcher, and was educated at the Royal Naval School, New Cross, London, at Queen's College, Cork, and at University College, Liverpool. He took the Scottish triple diploma in 1889. For 15 years he was consulting surgeon to the Birkenhead Borough Hospital, and he was the inventor of a number of devices used in surgical practice. During the late war he served for three years with a captain's commission in the Royal Army Medical Corps, and worked under the Ministry of Pensions. Dr. Butcher leaves a widow and daughters.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART. Arrangements have been made for the practice of the hospital to be open to undergraduates from Jan. 1st. One guinea will be charged for a one month's ticket, 2½ guineas for a three months' ticket. These fees are half those charged to graduates.

ROYAL INSTITUTION.—A general meeting was held on Dec. 6th, Sir Arthur Keith, F.R.S., Treasurer and Vice-President, in the chair. The Chairman announced that Prof. Julian Huxley had been elected Fullerian Professor of Physiology.—On Thursday, Dec. 16th, at 5.15 P.M., the Editor of THE LANCET will lecture on Medical Literature in Relation to Journalism.—On Tuesday, Dec. 28th, at 3 P.M., Prof. A. V. Hill will begin the Christmas course of juvenile lectures on Nerves and Muscles. Details of this course were given last week (THE LANCET, Dec. 4th, p. 1194).

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.—The annual dinner of the School and Hospital was held on Thursday, Dec. 2nd, at the Savoy Hotel, London, Lady Barrett, the Dean, presiding over a large number of doctors connected with the institution, their friends, the students and representative guests.

Sir John Rose Bradford, in proposing "Prosperity to the School and Hospital," regarded them as indivisible, and testified to the spirit prevailing at the Royal Free and all other hospitals with teaching schools attached, as something indefinable, a something existent in public schools and university colleges and found nowhere else. With regard to the voluntary system, on which the Royal Free and the other like charitable institutions of the country depended, he said that the serious threat to this system, following upon the pecuniary conditions produced by the war, had largely disappeared, leaving the system more stable than ever, based alike upon the generosity of the public and upon the freehanded service given by medical staff and lay authorities—in which connexion he referred warmly to the devoted work of Lord Riddell, the present Chairman. A school like that connected with the Royal Free, he said, having a creditable past and a promising future, was sure to progress, while he hoped that every opportunity for scientific research would be taken, because that was the surest way to march forward. He coupled the toast with the name of the Chairman, and reminded his audience how onerous the duties of the Dean of a medical school were when faithfully discharged.

Lady Barrett, in reply, made reference to the recent death of Dame Louisa Aldrich-Blake, the late Dean of the school, and expressed the regrets of all concerned with the hospital and school at the retirement of Dr. William Branson. She testified warmly to the services of Prof. Lucas Keene, the Sub-Dean, to whom, she added, the organisation of the dinner was due, and then spoke of recent devleopments in the institution, such as the forthcoming orthopædic department, the new children's wards, soon to be opened by Her Majesty the Queen, and the acquisition of a sports ground. Lady Barrett concluded by alluding with satisfaction to the fact that more of the students of the London School of Medicine for Women were entering general practice, perhaps as a result of the bar to marriage found in some of the public services. To-day, as general practitioners, she said, they would find opportunities for a full and useful life; they could teach preventive hygiene through the best of all mediums—the management of the home; while opportunities were now afforded for post-graduate education, and cottage hospitals were springing up to assist in clinical practice.

The toast of The Guests was proposed in a witty manner by Mr. Ulysses Williams, and replied to by Mr. T. F. Sibly, D.Sc., the new Principal Officer of the University of London, and Miss E. C. Lodge.

Dr. Sibly spoke of the great responsibilities which he had undertaken in connexion with so immense a University at a time when new efforts to organise and correlate its activities were finding expression in a Bill that showed every sign of being passed. He signified his gratitude for the manner in which he had been received at the various schools of the University which he had visited, and, referring to post-graduate education, he thought, that in spite of the work now being done, there was room for great developments.

Miss Lodge, speaking as an historian, said that a new connexion between the study of history and that of medicine had lately been brought home to her by the widely held view that medical conditions must have largely influenced both the character and behaviour of historical protagonists, and the health conditions in which the work of the world had to be done. She viewed with apprehension the necessity of learning medicine when no longer of student age, and considerably amused the company by detailing some monstrous mediæval receipts as constituting examples of medical history.

The health of the Chairman was proposed by Dr. Mary Blair, who spoke eloquently of the reliance which all her juniors placed upon Lady Barrett's scientific skill and uniform kindness. The evening closed with dancing.

QUEEN'S HOSPITAL FOR CHILDREN.—In his speech at last week's dinner of the Queen's Hospital for Children, Hackney-road, the Duke of York, who presided, stated that the two largest wards, containing 62 beds, would have to be closed at the end of the year unless a large sum were raised at once. Towards the £20,000 asked for, about £7000 had been obtained.

RADIUM FOR ADDENBROOKE'S HOSPITAL CAMBRIDGE.—A report from the medical staff emphasises the urgent need for a supply of radium. The minimum quantity necessary to make a start in treatment is 62 milligrams, which, at £11 10s. per milligram, comes to £713, and the cost of screens and other appliances would bring the total up to £943.

INTERNATIONAL MEETING AT FRANZENSBAD.—Following the precedent of last year, an international meeting of medical practitioners interested in cardiology and gynæcology will be held at Franzensbad from May 22nd to 26th next. Addresses on the present state of these branches of science will be given by well-known medical men.

THE SCHWEIZERISCHE MEDIZINISCHE WOCHENSCHRIFT.—Dr. Eugen Bircher, of Aarau, has been appointed co-editor with Prof. Alfred Gigon, of Basle, of this publication, in succession to the late Dr. Max Fingerhuth, of Zurich. Dr. Bircher is chief surgeon at the Aarau Cantonal Hospital, and is well known in Switzerland as an original writer on medical and medico-political matters.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.—On Nov. 27th (THE LANCET, p. 1139) we published a statement received from the secretary of the College, announcing that the Alvarenga Prize for 1926 had been awarded to Dr. P. S. Pelonze and Dr. F. S. Schofield for an essay entitled The Gamophage. We have since been informed that the title of the essay was The Gonophage.

DAVID LEWIS EPILEPTIC COLONY.—At the annual meeting of the David Lewis Manchester Epileptic Colony at Warford, Cheshire, it was stated that the daily average of colonists in residence was 373, and that there is a long waiting list. The 82 beds placed at the disposal of the Ministry of Pensions for ex-service men remains in full occupation.

HASTINGS DISPENSARY.—After redecoration and improvement, including the addition of a small operating department, the Hastings Dispensary, situated in the old part of the borough, has been reopened. It was established 95 years ago, and it is doing valuable work among the poor; it has been the means of relieving the Royal East Sussex Hospital to a considerable extent, and there is hope that it may soon be converted into a cottage hospital.

HARVEIAN SOCIETY OF LONDON.—The Buckston Browne Prize, consisting of a medal and the sum of £100, will be awarded for an essay on The Pathology, Diagnosis, and Treatment of New Growths Originating in the Walls of the Urinary Bladder. The prize is open to any member of the medical profession, under 45 years of age, who is registered in the British Isles or Dominions. Essays must be sent in by Nov. 1st, 1927. Further particulars may be had from the Hon. Treasurer, Dr. G. de Bec Turtle, 81, Cambridge-terrace, Hyde Park, W.2.

MAUDSLEY HOSPITAL.—The syllabus of lectures and practical courses for the Diploma of Psychological Medicine may now be had from the Director of the Central Pathological Laboratory, Maudsley Hospital, Denmark Hill, London, S.E.5. The first part of the course will begin on Jan. 4th, and includes lectures and demonstrations by Dr. F. Golla, Mr. S. A. Mann, Mr. Charles Geary, Dr. C. da Fano, and Dr. Henry Devine. The second part will follow in March, and the lecturers will include Dr. Bernard Hart, Dr. Edward Mapother, Dr. Golla, Dr. C. H. Bond, Dr. F. C. Shrubsall, Dr. Norwood East, Dr. A. W. Petrie, Dr. F. M. Walshe, and Mr. Foster Moore.

THE LATE DR. ALEXANDER HAMILTON.—Dr. Hamilton, who died at Edinburgh on Nov. 20th, came of a medical family and was born in Falkirk, where his father practised for many years. One of his brothers was the late Prof. David Hamilton, the first Erasmus Wilson professor of pathology in the University of Aberdeen. After studying at the Extra-mural Medical School at Edinburgh, Dr. Hamilton qualified in 1865. He went to Ashton-under-Lyne, Lancashire, as house surgeon at the District Infirmary in 1866 and was connected with the institution—as house surgeon, honorary surgeon, vice-President, and chairman of the medical board, and consulting surgeon—for 60 years. In Ashton-under-Lyne he had a large practice and for many years was certifying surgeon for Ashton and Hurst under the Factories and Workshops Acts. He retired from practice in 1915. Dr. Hamilton was a good violinist and an enthusiastic photographer. He celebrated his golden wedding in 1922.

A MEETING will be held at the residence of the Mayor of Lambeth, 193, Clapham-road, London, S.W., at 4 P.M. on Dec. 16th, when Dr. Camac Wilkinson will give an address on Tuberculin in the Diagnosis and Treatment of Tuberculosis.

A MANCHESTER WAITING LIST.—The Manchester Infirmary waiting list now reaches nearly 2000, mostly operation cases. It is impossible to take more patients until the nursing staff is increased, which cannot be until a new nurses' home is provided. The appeal for £150,000 to build such a home to accommodate 200 nurses, which was made a year ago, has produced little more than one-third of the sum needed, and the staffs in Manchester offices are being asked to contribute a penny a week per head towards providing the money.

ROYAL SUSSEX COUNTY HOSPITAL.—So many cases are now passing through the casualty department of this hospital, the great majority arising from the increasing motor traffic, that a house surgeon is to be appointed to have charge of the casualty department. At present there are three house surgeons and one house physician on the resident staff. In the 12 months ended Nov. 30th, 1925, the casualty department cases numbered 5612; in the 12 months ended Nov. 30th, 1926, the figure had reached a total of 7386.

UNIVERSITY OF LIVERPOOL.—Dr. W. S. Patton has been appointed to the Dutton Memorial Chair of Entomology. A medical graduate of the University of Edinburgh, he joined the Indian Medical Service in 1902, and retired with the rank of major in 1921. During the war Dr. Patton was entomologist to the Mesopotamian Expeditionary Force. He has acted as Director of the King's Institute of Preventive Medicine, Madras, and as Director of the Pasteur Institute of Southern India. Recently he has been engaged in entomological research in China, and has had charge of the Kala Azar Commission of the Royal Society.

VOLUNTARY HOSPITAL SYSTEM.—Speaking last week at a dinner given in support of the appeal for £25,000 for the extension of the London Jewish Hospital at Stepney Green, towards which £21,000 has now been raised, Sir Berkeley Moynihan said that the voluntary hospital system had never had its chance, and that if it perished it would be because of the lack of adequate organisation. The present situation was deplorable, and the 12,000 additional beds which were officially said to be needed might be multiplied by at least three if the inaugural symptoms of disease were to be dealt with adequately.

MEDICAL INSPECTION OF SCHOOL CHILDREN IN DUBLIN.—Little attempt has been made in any part of Ireland, writes our Irish correspondent, to carry into effect the provisions of the Medical Inspection of School Children Act of 1919, although these provisions were compulsory. As far as the area of the Irish Free State is concerned, only in two areas, both urban, is there medical inspection. It is now announced that a system of inspection is about to be established in the city of Dublin. It is estimated that the scheme will cost about £6000, of which half will be borne by central funds and half by the rates. It is intended to appoint two whole-time medical officers, who will work under the control of the medical officer of health. Arrangements for treatment will be made with the city hospitals.

SMALL-POX IN DURBAN.—Up to Nov. 17th there had been 13 deaths from small-pox in the Durban epidemic. The deaths were chiefly those of Indians, and so far there had been no deaths amongst Europeans. Many thousands of people had been vaccinated in Durban, largely Indians and natives, and over 4000 people had been vaccinated in the neighbouring city of Pietermaritzburg. Two cases of small-pox are also reported from Johannesburg, and they are believed to have been contracted from the infection in Durban. The publicity Durban is getting over the outbreak is far from welcome in view of the coming Christmas carnival.

THE LATE DR. S. C. NOBLE.—Dr. Samuel Clarke Noble, the oldest medical practitioner in Westmorland, died on Dec. 3rd, at his residence in Stricklandgate, Kendal, in his ninetieth year. He was a student at Middlesex Hospital, and qualified M.R.C.S. and L.S.A. in 1859. A member of a family which had produced doctors for three generations, he had an extensive practice in Lakeland, journeying mostly on horseback. He retired about a quarter of a century ago. In 1914, although well on towards 80 years of age, he volunteered for service in the war, and worked many hours a day examining military recruits in Westmorland, refusing remuneration for his services. He was a justice of the peace and Deputy Lieutenant of the County of Westmorland and in his younger days surgeon to the Kendal Hospital and H.M. Prison, Kendal.

Parliamentary Intelligence.

HOUSE OF LORDS.

TUESDAY, DEC. 7TH.

Births and Deaths Registration Bill.

THE Births and Deaths Registration Bill was read a second time.

HOUSE OF COMMONS.

WEDNESDAY, DEC. 1ST.

Street Collections for London Hospitals.

Sir ROBERT GOWER asked the Home Secretary whether he was aware that the operation of the regulations regarding street collections in the London Metropolitan area made by him on Oct. 1st last was such as to rescind the power possessed by the Commissioner of Police to grant permits for collections made on behalf of London hospitals and other charities by friendly society organisations in connexion with Sunday processions; and whether, having regard to the circumstance that such collections had been made for many years without inconvenience to the public and had resulted in considerable sums being raised for London hospitals, he would consider the desirability of amending such regulations to enable the Commissioner of Police to grant permits in such cases and subject to such conditions as he might think proper.—Captain HACKING replied: Before 1920 collections accompanying moving processions were entirely prohibited. In 1920 the Regulations were amended so as to allow collecting processions in special cases, but experience has shown that these processions are liable to cause so much disturbance and interference with traffic that it was decided to amend the street collection Regulations so as to prohibit the practice. My right hon. friend is sorry to have to put any obstacle in the way of collections for good objects, but the London traffic problem is now such that other considerations must be subordinated to traffic considerations.

Mosquito Pest at Singapore.

Mr. HORE-BELISHA asked the First Lord of the Admiralty what special work had been undertaken, and with what cost, towards mitigating the mosquito pest which had impeded the work at Singapore.—Mr. DAVIDSON (Parliamentary Secretary to the Admiralty) replied: The hon. Member is mistaken in supposing that the work has been impeded, since adequate steps were taken at the outset to prevent malaria by surface drainage and clearing. So far about £12,000 has been spent on these operations.

THURSDAY, DEC. 2ND.

University College Laboratory.

Captain ARTHUR EVANS asked the Secretary of State for the Home Department on what dates during the last five years the University College laboratory was inspected; and on how many of these occasions inspection was without notice; whether there were only two inspectors for the whole of Great Britain; and if he did not think that the inspection which it was desirable to have under this Act should be increased.

Sir W. JOYNSON-HICKS replied: There is a very strong tendency against such increases. The fact that this laboratory was visited 35 times in the last 18 months and 30 times without notice shows that the inspectors are doing their work very well.

Resignation of Chief Factories Medical Officer.

Mr. RHYS DAVIES asked the Home Secretary the reason why the chief medical officer of the factories department of the Home Office had resigned his post.—Sir W. JOYNSON-HICKS replied: The senior medical inspector of factories, having reached the pensionable age, applied to be allowed to retire, giving as his reason that he did not wish to be concerned in the administration of the Lead Paint (Protection against Poisoning) Bill; and I acceded to his application.

Mr. DAVIES: Is it not a fact that the pensionable age has nothing whatever to do with this resignation, and that it concerns mostly the point that this officer was at Geneva when this Convention was adopted, and that he feels now that, having negotiated the Convention, his honour is in question?

Sir W. JOYNSON-HICKS: I do not know about his honour. He had reached pensionable age. He retired because he did not agree with the views which I and His Majesty's Government have taken with regard to this matter.

Mr. DAVIES: Is it not true to say that this gentleman could have served the Home Office for one or two more years within the pensions scheme, but that he resigned as a protest against the action of the Government in regard to white lead poisoning?

Sir W. JOYNSON-HICKS: Certainly. I am expressing no opinion on the resignation. Possibly he could have served one or two more years, but he is quite entitled, if he so desires, to resign his position, which he has done.

Complaints against Panel Practitioners.

Mr. DAY asked the Minister of Health whether, in view of the number of complaints received from the contributors under the National Health Insurance Acts, he would consider an inquiry regarding the medical attention afforded panel patients.—Mr. NEVILLE CHAMBERLAIN replied: The efficiency of the medical service under the National Health Insurance Acts was exhaustively investigated by the Royal Commission, whose report, published early this year, contains a very favourable verdict. Comparatively few specific complaints are received by the Department, nor has anything come to my notice since the report which would justify the holding of any further inquiry.

Working-class Houses.

Mr. TREVELYAN THOMSON asked the Minister of Health the total number of working-class houses built since the Armistice; the number built under the various housing Acts; and the number in rural districts.—Mr. NEVILLE CHAMBERLAIN replied: It is estimated that 768,047 houses have been completed in England and Wales since the Armistice, 479,842 with State assistance under the housing Acts, and 288,205 without such assistance. Of the latter, 207,700 houses are of a rateable value not exceeding £26 in the provinces or £35 in the Metropolitan Police District. Approximately 209,500 houses have been erected in rural districts during the same period—117,000 under the housing Acts, and 92,500 without subsidy. Of the latter, some 79,200 are of a rateable value not exceeding £26 (£30 in the Metropolitan Police District).

Vacancy on the General Medical Council.

Viscount SANDON asked the Vice-Chamberlain of the Household, as representing the Lord President of the Council, whether the Lord President would select a non-professional member to fill the vacancy in the General Medical Council in January; and when his name would be announced.—Major HENNESSY replied: As I informed my noble friend in June last, it is not possible to say in advance what action the Lord President may see fit to take when the occasion arises for filling the vacancy now in question.

Viscount SANDON: Then I take it that there is no Parliamentary control in this matter at all.

No answer was given.

Reduction in Housing Subsidies.

On a motion by Mr. NEVILLE CHAMBERLAIN (Minister of Health) "That the draft of the Order proposed to be made by the Minister of Health and the Scottish Board of Health, with the approval of the Treasury under Section 5 of the Housing (Financial Provisions) Act, 1924 (presented Nov. 25th, 1926), be approved," Dr. HADEN GUEST said while there was a certain amount of theoretical justification at the present time for any effort to reduce national expenditure, the question was whether this proposal was either an economical or a proper way of doing so. He should like proof of the assertion of the Minister of Health that costs of building were likely to come down. But the real reason against reducing the subsidy was this. The subsidy was intended not to meet a normal condition of things, but a condition of things which 20 years before the war was already abnormal, and which during and since the war, with a slight amelioration lately, had grown steadily worse. They had not overtaken the arrears in normal housing. So far as he was aware they had not yet begun to touch the really serious slum question. How, then, was it possible to say that a subsidy which was imposed for dealing with an emergency should be removed before any reasonable being could assert that that emergency was abating? The reduction was altogether too general. Areas differed in the urgency of their demands. If the subsidy was to be reduced at all—and he did not admit that it was logical, desirable, or defensible to do so—then it should only be reduced in particular areas where it could be shown that the problem was being dealt with adequately. He would urge the Minister not to reduce the subsidy in rural areas. The Minister was very well informed as to what the housing conditions were by an army of medical men and public health officers all over the country, who sent him reports couched in language which if it were used by him (Dr. Haden Guest) would probably be stigmatised in the Press as Bolshevist propaganda. Let him refer in particular to the report of the medical officer of health for Birmingham. He had just been down in his own constituency (Southwark), and he had been besieged by people wanting rooms, and to know how they could get out of their overcrowded condi-

tions. He confessed that it was absolutely necessary to abstract oneself from the heart-rending vision of suffering and misery in order to be able to contemplate this problem cogently and clearly, but that did not excuse the Minister of Health for taking a course which was going to make it much more difficult, especially in the poorest and hardest-hit areas, to get houses erected and to get the slum problem dealt with. If the Government really meant business, instead of closing up on the subsidy they would have gone on with the present subsidy arrangements and added to them a big programme of slum clearance.

Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) said the present Government was as anxious as any government to avoid any break in the continuity of house production which was proceeding at an unexampled rate and had been exceeded by no other country in the world. Of the 750,000 new houses completed in this country since the war, nearly half had been completed during the last two years. They desired to exceed, if possible, that fine record. There was, indeed, every indication in the housing figures which were now presented to them that during the next 12 months they would do even better, and that the 200,000 mark would be passed. It was a modest step and a modest reduction which they were making, and it was in the right direction. The main object was to reduce the cost of housing, and it was a very well-advised step to begin to end the vicious and destructive system of subsidy, which was as bad for the building trade as for any other industry.

The resolution approving the draft of the Order was carried by 181 votes to 111.

MONDAY, DEC. 6TH.

Housing (Rural Workers) Bill.

The Housing (Rural Workers) Bill was considered on Report, and read a third time.

Infantile Paralysis in Rutland.

Colonel GRETTON asked the Minister of Health if there had been any further outbreaks of infantile paralysis in the county of Rutland; if so, what was the date of the latest recorded case; and if he could say the length of the period which his department considered should elapse before danger of infection or contagion ceased in ordinary cases of this disease.—Sir KINGSLEY WOOD replied: No further cases of this disease have been notified in Rutland since the occurrence of two cases at Uppingham School during the week ended Nov. 13th. As regards the last part of the question, in the present state of knowledge of this disease it is the practice of my right hon. friend's Department to recommend the isolation of patients who have been attacked by it for a period of six weeks from the date of onset of the disease.

Opium Restrictions in India.

Mr. CECIL WILSON asked the Secretary of State for the Colonies whether, as a result of the Government of India's decision to reduce by 10 per cent. per annum the export of opium except for medical and scientific purposes, the imports into British dependencies in the Far East would be proportionately reduced; and whether he could give an assurance that opium for purposes of smoking would not be imported from other sources to compensate for the reduction in the imports from India.—Mr. AMERY replied: No, sir. No such reduction would in my opinion be practicable in present circumstances.

Vivisection in London Physiological Schools.

Sir ROBERT GOWER asked the Home Secretary the number of dogs which had been used for vivisectional experiments at physiological schools in the London Metropolitan area during the past 12 months.—Capt. HACKING replied: Since Jan. 1st of this year 823 dogs have been used for experimental purposes in premises within the London area which are registered under the Act. All but a very few of the animals were kept under complete anæsthesia during the whole of the time of the experiment, and were destroyed before recovering from the anæsthesia.

Sickness and Disablement Benefit in 1925.

Mr. DAVID GRENFELL asked the Minister of Health how many working days were lost through illness by contributors towards the national health insurance schemes, with the total amount of benefit paid in the year 1925.—Mr. NEVILLE CHAMBERLAIN replied: The total amount of sickness and disablement benefit paid in the year 1925 to contributors to the National Health Insurance schemes in England and Wales during periods of illness which rendered the contributors incapable of work, was approximately £13,849,000. Exact particulars are not available as to the number of working days for which sickness and disablement benefit were paid, but it is estimated that the total number of weeks of sickness represented by the above payment is upwards of 25,000,000. In making this estimate, account has to be taken of a number of uncertain factors, and the result can only be regarded as a rough approximation.

Medical and Surgical Treatment in Poor-law Institutions.

Major TASKER asked the Minister of Health whether he was aware that boards of guardians were advised that they had no power under the existing law to refuse the admission to Poor-law institutions for the purpose of medical or surgical treatment of persons who could afford to pay for the necessary treatment; and whether he would introduce legislation giving boards of guardians convenient powers to take, where necessary, legal steps to recover from the estates of the patients the whole or a suitable proportion of the cost of their treatment and maintenance both in cases in which the patient was in receipt of an old age pension or of sickness or disablement benefit under the National Health Insurance Acts and in cases in which the patient was not in receipt of any such moneys.—Mr. NEVILLE CHAMBERLAIN replied: It is the duty of a principal officer of a Poor-law institution to admit an applicant, without any order for relief, in any case of sudden or urgent necessity, but the guardians have powers in certain circumstances to recover the cost of relief. As regards health insurance benefits, it is an essential feature of the National Health Insurance Act, embodied in the original scheme of 1911, and repeated in subsequent enactments, that money payable by way of benefit shall not be diverted to Poor-law authorities or otherwise used to relieve local rates. The intention of the Act is that sickness benefit should primarily be devoted to the necessities of the individual and his family, and benefit is not assignable. As regards old age pensions, the relevant part of the Contributory Pensions Act re-enacts Section 3 (1) of the Old Age Pensions Act, 1919, which provides that a person shall be disqualified for receiving or continuing to receive a pension while he is an inmate of any workhouse or Poor-law institution—with a saving proviso which raises the disqualification for three months where recourse is had to a Poor-law institution only for the purpose of surgical or medical treatment. A suggestion that inmates of Poor-law institutions should not, as such, be disqualified for receiving old age pensions, but that the pensions should be appropriated by the guardians was considered, but rejected by the Departmental Committee on whose recommendation Section 3 (1) of the Act of 1919 was based.

Public Health (Smoke Abatement) Bill.

This Bill was considered on Report, and an amendment to bring the chimneys of domestic dwelling-houses in London within its scope was negatived. Sir A. HOLBROOK moved to include private dwelling-houses in the clause which gives urban authorities power to require in new buildings the provision of such arrangements for heating and cooking as are calculated to prevent or reduce emission of smoke.—Mr. NEVILLE CHAMBERLAIN (Minister of Health) said that only a trifling number of houses could be affected by the amendment; he was not prepared to deny to householders the use of the open fire until there was a reasonably cheap and satisfactory alternative.—The amendment was rejected by a majority of 138. The operation of the Bill was postponed from Jan. 1st to July 1st.

TUESDAY, DEC. 7TH.

Saltash Pensions Hospital.

Mr. BRIANT asked the Minister of Pensions how many patients at the Saltash Pensions Hospital had discharged themselves during the last 12 months; and if he had made inquiry into the food and general condition of that institution.—Lieut.-Colonel STANLEY (Parliamentary Secretary to the Ministry of Pensions) replied: During the period referred to 63 men discharged themselves against medical advice from Saltash, after an average period of stay in the institution of close upon six months. I understand that while in several of these cases the men must be regarded as practically irresponsible for their actions, most of the men discharged themselves for domestic reasons. The hospital is regularly visited by medical inspectors of the Ministry, and my right hon. friend is satisfied that the feeding and general arrangements are satisfactory.

Specialist Medical Service for Insured Persons.

Mr. HORE-BELISHA asked the Minister of Health when it was proposed to put into operation the recommendation recently made by the Royal Commission on National Health Insurance that the scope of the benefit should be extended to include a consultant and specialist medical service and that the necessary funds for that purpose should be obtained by a partial pooling of future surpluses of approved societies.—Major HENNESSY replied: My right hon. friend is not at present in a position to say what action will be taken with regard to the recommendation to which the hon. Member refers.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
MONDAY, Dec. 13th.—5.30 P.M., WAR. Cinematograph Demonstration: Lieut.-Colonel E. M. Cowell: Thomas's Splint Drill. Paper: Surgeon-Comdr. H. E. R. Stephens, R.N.: Abdominal Hernia in the Royal Navy.
TUESDAY.—5.30 P.M., GENERAL MEETING OF FELLOWS and Ballot for the Election to the Fellowship. 5 P.M., THERAPEUTICS AND PHARMACOLOGY. Papers: Dr. Curtis and Dr. Sampson Wright: On the Action of Lobeline. Dr. R. Hilton: On a Comparison of Some Methods of Administration of Oxygen. 8.30 P.M., PSYCHIATRY. Presidential Address: Dr. W. Aldren Turner: Some Observations Upon Epilepsy.
WEDNESDAY.—5 P.M., HISTORY OF MEDICINE. Papers: Dr. A. Davies: A Montpellier Diploma. Mr. C. J. S. Thompson: A Historic Case of Surgical Instruments. (The case of instruments presented to the Royal College of Physicians in 1652 will be exhibited by kind permission of the President and Council of the College.) Prof. Siddigi (Madras): Medical Case-notes from Arabic Literature (communicated by Dr. Singer). Dr. Charles Singer: An Example of the Egyptian God Bes exhibiting Symptoms of Spina Bifida.
THURSDAY.—5 P.M., DERMATOLOGY. (Cases at 4 P.M.) Cases: Dr. Parkes Weber: (1) Very Severe Prurigo of Besnier in an Adult. Dr. E. G. Ffrench: (2) Lupus Erythematosus Affecting Fingers Only; (3) Lupus Verrucosus. Other cases will be shown.
FRIDAY.—8 P.M., ELECTRO-THERAPEUTICS and SURGERY. Attention is drawn to the alteration in the time of this meeting. Special Discussion on Diathermy. Speakers: Dr. E. P. Cumberbatch (for the Section of Electro-Therapeutics); Mr. F. J. Steward (for the Section of Surgery); Mr. Gwynne Williams and others will also take part in the discussion.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.
MONDAY, Dec. 13th.—8.30 P.M., Discussion on Recent Advances in the Ætiology, Diagnosis, Prophylaxis, and Treatment of the Exanthemata, to be introduced by Dr. J. D. Rolleston, followed by Dr. R. A. O'Brien.

ST. JOHN'S HOSPITAL DERMATOLOGICAL SOCIETY.
WEDNESDAY, Dec. 15th.—4.15 P.M., at St. John's Hospital, Leicester-square: Clinical cases will be shown and a paper will be read by Dr. P. J. Edmunds on Skin Affections following Vaccination.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.
WEDNESDAY, Dec. 15th.—1.45 P.M., Dr. Norman Mackeith: Examination of Accessory Sinuses.
FRIDAY.—1.45 P.M., Mr. J. D. McLaggan: Examination of the Nose. 4 P.M., Mr. Harold Kisch: The Operative Treatment of Nasal Sinus Suppuration.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, Dec. 13th, to SATURDAY, Dec. 18th.—FELLOWSHIP OF MEDICINE. Special Lecture at the Medical Society, 11, Chandos-street, Cavendish-square. Thurs., Dec. 16th, at 5 P.M., Mr. Ernest Clarke: Emergencies in Ophthalmic Practice. Free to all members of the medical profession.—INFANTS HOSPITAL, Vincent-square, S.W. Special Course on Diseases of Infants. Every afternoon from 2 P.M. Special Lectures and Demonstrations.—WEST END HOSPITAL FOR NERVOUS DISEASES, 73, Welbeck-street, W. Special Lecture-demonstrations upon Selected Cases at 5 P.M. Further information from the Secretary of the Fellowship of Medicine.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.
MONDAY, Dec. 13th.—11 A.M., Mr. Tyrrell Gray: Surgical Wards. 12 noon, Mr. Simmonds: Demonstration of Fractures. 2 P.M., Dr. Trevor Davies: Gynæcological Department.
TUESDAY.—11 A.M., Mr. Endean: Venereal Disease Demonstration. 12 noon, Dr. Burrell: Chest Cases. 2 P.M., Mr. Sinclair: Surgical Out-patients.
WEDNESDAY.—10.30 A.M., Dr. Burnford: Medical Wards. 2 P.M., Dr. Owen: Medical Out-patients. 2 P.M., Mr. Tyrrell Gray: Operations.
THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Department. 2 P.M., Dr. Scott Pinchin: Medical Out-patients. 3.30 P.M., Sir Henry Simson: Gynæcological Wards.
FRIDAY.—10 A.M., Dr. Dowling: Skin Department. 11 A.M., Dr. Pritchard: Modern Methods in Medicine. 2 P.M., Mr. Addison: Operations.
SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy Department. 10 A.M., Mr. Banks-Davis: Operations on Throat, Nose, and Ear.
Daily, 10 A.M. to 5 P.M., Operations, Medical, Surgical, and Special Out-patient Departments. Saturdays, 10 A.M. to 1 P.M.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY, Dec. 13th.—10 A.M., Surgical Clinic. 2 P.M., Medical Cases in the Wards. 2.30 P.M. to 5 P.M., Medical, Surgical, and Gynæcological Clinics. Operations.
TUESDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, Throat, Nose, and Ear Clinics. Operations.
WEDNESDAY.—2.30 P.M. to 5 P.M., Medical, Skin, and Eye Clinics. Operations.
THURSDAY.—11.30 A.M., Dental Clinic. 2.30 P.M. to 5 P.M., Medical, Surgical, and Ear, Nose, and Throat Clinics. Operations.
FRIDAY.—10.30 A.M., Throat, Nose, and Ear Clinics. 2.30 P.M. to 5 P.M., Surgical, Medical, and Children's Diseases Clinics. Operations.
On Tuesday, Dec. 14th, and Friday, Dec. 17th, at 2.30 P.M., there will be special demonstrations of Ear, Nose, and Throat Cases and Surgical Cases, by Mr. W. Ibbotson and Mr. E. Gillespie respectively.

THE LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.
TUESDAY, Dec. 14th.—5 P.M., Dr. S. E. Dore: Erythemato-Squamous Eruptions.
THURSDAY.—6 P.M., Dr. J. T. Ingram: Pathology Demonstration.

POST-GRADUATE HOSTEL, Imperial Hotel, Russell-square, W.C.
TUESDAY, Dec. 14th.—9 P.M., Prof. C. A. Lovatt Evans: Capillary Circulation.
THURSDAY.—Mr. A. E. Mortimer Woolf: Pain.
FRIDAY.—Dr. T. Wilson Parry: The Differential Diagnosis of the Various Kinds of Holes Discovered in the Skulls of Prehistoric Man.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.
TUESDAY, Dec. 14th.—4.15 P.M., Mr. J. Howson Ray: Spinal Caries with Paraplegia.
FRIDAY.—4.15 P.M., Dr. E. F. Hill: Blood Changes During Anæsthesia.

ST. MARGARET'S HOSPITAL FOR WOMEN, Acomb-street, Whitworth Park, Manchester.
WEDNESDAY, Dec. 15th.—4.15 P.M., Mr. A. C. Magian: Ovarian Grafting for the Cure of Sterility.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS.
FRIDAY, Dec. 17th.—3.30 P.M., at the Royal Infirmary: Mr. Finch: Strictures, Innocent and Malignant.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, St. Andrews.
TUESDAY, Dec. 14th.—4 P.M., Prof. Murray Lyon: Methods of Influencing the Blood Pressure. Discussion to be opened by Dr. W. F. Mair.

CHADWICK PUBLIC LECTURES.
MONDAY, Dec. 13th.—8 P.M. (at the Royal Sanitary Institute, 90, Buckingham Palace-road), Mr. W. A. Robson, Ph.D.: Legal Conceptions of Public Health.

Appointments.

JEFFERSON, G., M.B., M.S. Lond., F.R.C.S., has been appointed to the newly-created post of Honorary Neurological Surgeon at the Royal Infirmary, Manchester.
MURCHISON, K. D., M.B., Ch.B. Glasg., Certifying Surgeon under the Factory and Workshop Acts for the Shaw District of the County of Lancaster.
SMITH, NORA F., M.B., B.S. Lond., D.P.H., to take charge of the Maternity and Child Welfare Department of the City of Manchester.
North Middlesex Hospital: RAMSAY, FREDA, M.D., B.S. Durh., D.P.H., D.O.M.S., Ophthalmic Surgeon: FIGDOR, P., M.B., Ch.B. Glasg., Medical Electrician and Actinotherapist.

Vacancies.

For further information refer to the advertisement columns.

All Saints' Hospital for Genito-Urinary Diseases, Vauxhall Bridge-road, S.W.—Res. Sen. H.S. Also Non.-Res. Jun. H.S. At rate of £200 and £100 respectively.
Bethnal Green Borough Council.—Consulting Obstetricians. £5 5s. per case.
Brighton, New Sussex Hospital for Women and Children.—Hon. Asst. P. Also Hon. Clin. Asst.
Brighton, Sussex, Maternity and Women's Hospital.—Second Hon. Obstet. Phys.
Cairo University.—Prof. of Pathology. £E.2000. Also Prof. of Bacteriology. £E.1500.
Cancer Hospital, Fulham-road, S.W.—Pathologist. £1000.
Capetown, City of—Med. Supt. of Hospitals. £800.
Cardiff City Mental Hospital, Whitchurch.—Res. Clin. Asst. 50 guineas for six months.
Dreadnought Hospital, Greenwich.—H.P. and H.S. Each at rate of £110.
East London Hospital for Children and Dispensary for Women, Shadwell, E.—H.S. At rate of £125.
Glasgow, Consumption Sanatoria of Scotland, Bridge of Weir.—Asst. Res. M.O. £200.

Hammersmith Infant Welfare Centre.—M.O.
Hampshire County Council.—Dental S. £500.
Hospital for Sick Children, Great Ormond-street, W.C.—Surg., Phys. to Out-patients. Anæsthetist. £15 15*s.*
Ipswich, East Suffolk and Ipswich Hospital.—H.S. and Cas. O. Each at rate of £100.
Lambeth Parish Hospital.—Two Jun. Asst. M.O.'s. £200 each.
Maidstone, Kent County Mental Hospital.—Asst. M.O. £300.
Maidstone, West Kent General Hospital.—H.S. £220.
Manchester, Ancoats Hospital.—H.S. At rate of £100.
Miller General Hospital for South-East London, Greenwich-road, S.E.—Res. Cas. O. £150. Also H.S. £125.
Newcastle-upon-Tyne, Princess Mary Maternity Hospital.—Asst. Res. M.O. At rate of £40.
Oldham Royal Infirmary.—H.S. At rate of £200.
Oxford, Radcliffe Infirmary and County Hospital.—H.S. and Obstet. H.P. Each at rate of £120.
Prince of Wales's General Hospital, Tottenham, N.—Hon. Asst. S., Physio-Therapeutist, and Hon Asst. P. or S. to X Ray Dept. Also H.S.
Rochdale Infirmary and Dispensary.—Jun. H.S. £200.
Royal Army Medical Corps.—Commissions.
Royal Free Hospital, Gray's Inn-road, W.C.—Orthopædic Surg.
Royal Waterloo Hospital for Children and Women, Waterloo-road, S.E.—H.P. At rate of £100.
St. Mary's Hospital, Institute of Pathology and Research.—Research Studentship. At rate of £200.
St. Mary's Hospital, W.—Med. Registrar. £200.
St. Peter's Hospital for Stone, &c., Henrietta-street, Covent Garden, W.C.—Clin. Assts.
Salford Royal Hospital.—Res. Surg. O. £200. Two H.S.'s, H.P., and Cas. H.S. Each at rate of £125.
Sheffield, Jessop Hospital for Women.—Asst. H.S. At rate of £100
Sheffield Royal Infirmary.—H.S. At rate of £80.
Stockport Infirmary.—H.S. £175.
Sutton, Surrey, Downs Hospital for Children.—Ass. M.O. £550.
Wrexham and East Denbighshire War Memorial Hospital.—Two Res. H.S.'s. Each at rate of £100.

The Chief Inspector of Factories announces vacant appointments for Certifying Factory Surgeons at Lymm (Cheshire) and Driffield (Yorks).

Births, Marriages, and Deaths.

MARRIAGES.

CORKHILL—JONES.—On Nov. 26th, at St. James's Church, Birkdale, Joseph G. G. Corkhill, M.D., to Julia F. Wheatley Jones, of Ellerslie, Birkdale.

MORGAN—MACDONALD.—On Dec. 1st, at the Marylebone Presbyterian Church, Oswald Gayer Morgan, M.Ch., F.R.C.S., to Jessie Campbell MacDonald, younger daughter of Colin MacDonald and Mrs. MacDonald, of Abbey-road, St. John's Wood, N.W.

DEATHS.

DATE.—On Dec. 4th, suddenly, Margaret, the beloved and loving wife of William Horton Date, of 3, Homefield-place, Exeter.

HEARNDEN.—On Dec. 2nd, suddenly, at Cavendish Lodge, Cavendish-road, Sutton, Surrey, Ernest Morgan Hearnden, M.R.C.S. Eng., L.R.C.P.

HYDE.—On Nov. 29th, suddenly, at Newport, Mon, John Wilkinson Davis Hyde, M.R.C.S., L.R.C.P., Tuberculosis Physician, Monmouthshire, under King Edward VII. Welsh National Memorial Association, aged 33.

WHITELAW.—On Dec. 4th, suddenly, at St. George's-road, Golders Green, Dr. William Whitelaw, aged 77.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

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Notes, Comments, and Abstracts.

HOSPITALS IN NORTHERN AMERICA.

AN ADDRESS BEFORE THE ULSTER MEDICAL SOCIETY.

Prof. C. G. LOWRY read a paper entitled Notes on Hospitals and Hospital Administration in Canada and the United States at a meeting of the Ulster Medical Society held on Dec. 2nd with Dr. M. J. Nolan, the President, in the chair. After paying warm tribute to the kindness and hospitality he had everywhere received during a recent American visit, Prof. Lowry spoke of some differences in organisation and in technique between the trans-Atlantic hospitals and our own. He found in the entrance hall of many hospitals desks marked "Information" on one side and "Hostess" on the other side. At the former there was an official whose function it is to receive visitors to the hospital, to answer inquiries from friends of patients, and to direct visitors where certain people could be found. At the other desk an official interviews the friends of intending patients and deals with applicants for private accommodation in the hospital. The new hospitals in Canada and the States were constructed of four or five stories, and much use was made of electric lifts. In some cases the kitchen and stores were upon the fifth floor, each floor having a separate lift. Food distribution was effected by what might be called a "field kitchen," wheeled in turn to each patient's bed, and this plan seemed to work well, and to save labour to the nurses. Noise was mitigated by thick rubber flooring. No bells were allowed. In some hospitals each bed had a bell-push which, when pressed, sounds a faint buzzer at the desk of the nurse in charge, and at the same time a small numbered disc on her desk is illuminated, corresponding with the number of the bed. Much ingenuity was evident in labour-saving devices.

In the great majority of hospitals provision was made both for public and for paying patients; in some cases there was a special wing, in others a separate pavilion. The private pavilions had their own separate X ray installation, sometimes separate laboratories, and the operating theatres were on the most approved plan. The cost of private accommodation was high, and it was an index to the prosperity of the countries that the high figures were willingly paid. Substantial profits accrued from the pay wards. Prof. Lowry thought that if there were equal numbers of pay and public patients a hospital might be made almost self-supporting. The ratio of private to public patients was usually about 1 to 2. In some cases the municipality paid 6*s.* per diem for indigent patients. All patients contributed to the hospital.

In the modern maternity hospitals there were about five delivery rooms to every 100 patients, with two operating theatres. Some of these hospitals had well-isolated septic departments, a nursery for children of septic mothers, and an isolation nursery for babies suffering from any infection. Adjoining the delivery rooms accommodation was provided for the practitioner to rest if his case was delayed. In several hospitals a small single-bed ward connected with the main wards was used for a dying patient, thus saving much nervous strain to the other patients. Sitting-rooms for the relatives of patients were provided in some places.

Nursing Conditions.

Nursing is maintained at a high level, and the social status and educational equipment of the nurses are higher than at home. Many nurses are graduates in arts or science. The remuneration is good, ranging from about 26*s.* to 32*s.* per diem. The nurses' quarters are often admirable. The course of training is on much the same lines as at home. In many of the hospitals there is a "metabolic" kitchen, where diets for special cases, such as diabetics and nephritics, are specially prepared under a diet nurse. Some of these cases after convalescence are detained in hospital for several weeks and undergo a tuition course with lectures and demonstrations, preparatory to their discharge from hospital.

The arrangements for the welfare of babies in the maternity hospitals were good, one or two nurseries being available on each floor. At feeding time the babies were wheeled on trolleys to the wards and distributed to their mothers, and, when fed, were promptly wheeled back. Any mother suffering from a catarrhal affection had to wear a mask when nursing her child, and no visitors were allowed in the nurseries. In one maternity hospital each child had a separate bath, which was sterilised daily, a separate sterile towel, and a separate washcloth, and the nursery floor was washed daily with lysol soap. The identification of a baby was provided for by necklets of beads stamped with the letters of its name. Much importance was attached to the maintenance of an even temperature in the nurseries, since it was found that, if the temperature of the nursery fell 5° in 24 hours, the babies lost weight.

The regulations in regard to visitors both in maternity and in general hospitals were much more stringent than in the home countries. Children were not allowed to visit maternity hospitals under any circumstances. Even in the private pavilions only two visitors were allowed to a patient, and in the public wards of the maternity hospitals, as a rule, only one visitor was permitted. In one hospital patients who had undergone abdominal section were allowed no visitors until after the fourth day, except one relative for a few minutes.

As regards anæsthesia, the routine was gas and oxygen, followed by ether or ethylene gas. Chloroform was never employed. Radium was generally preferred to operation in primary carcinoma of the cervix uteri. The results were good. Protein injections were largely used in gynæcological infections. Blood transfusions were a routine measure in all poor operative risks. Blood pressure observations are more frequently studied than in some other countries. Rectal examinations with the gloved finger were the rule, vaginal examinations being reduced to a minimum.

The arrangements for teaching are good. In some cases accommodation with residence was provided for students in the hospitals. Medical schools limited the number of students according to their clinical material, and overcrowding was prohibited.

DANGERS OF THE BARBER'S CHAIR.

A RECENT essay by Dr. K. G. Colquhoun[1] on Some Dangers of the Barber's Chair, is worthy of the attention of all the barber's clients. It is not only in Australia that many hairdressers ply their trade to the danger of the public, and in London, at any rate, it is exceptional to find a shop where the arrangements are such that the well-informed can feel themselves fully guarded against infection. A great many hairdressing establishments would find no customers were it not that the population at large is not fastidious and busy people are almost compelled to use the services of those they find at hand.

It is in the public interest that barbers and their assistants should be compelled to study those diseases of the scalp, beard, and nails which experience has shown to be due to microbic infection. If the germs of a disease are present on the scalp or face the barber's implements are at least as effective as the platinum loop for their conveyance and inoculation on a fresh and hitherto uncontaminated medium—the next scalp or face that presents itself. Whether a disease is thereby immediately or remotely contracted depends on a number of chances which it is difficult to estimate. The success or otherwise of inoculation is governed by the degree of resistance (acquired or inherited) of the individual, by measures taken to cleanse the contaminated part, by the virulence of the infecting organism, and by many other factors as well. By no means every purposive and scientific inoculation succeeds, and those who escape an accidental infection are admittedly in the majority. It cannot be denied, however, that from time to time there are definite cases of specific infection in which the conveying agent must have been the barber's instrument. Of these infections three, in virtue of their highly characteristic clinical and microscopic appearances, are particularly worthy of mention: impetigo (due to a virulent streptococcus), seborrhœa capitis, and tinea in its various forms and situations.

Impetigo has a habit of occurring in local epidemics; one of these was a particularly obstinate outbreak of the disease last year in a London club, whose members had attended the same hairdresser. In this instance it was easy to trace the source of the infection and prevent fresh cases arising, but where the victims are not friends or acquaintances and are unaware of other cases, the difficulties of apportioning responsibility and eliminating the source of infection may well be insurmountable.

Seborrhœa of the scalp, being a condition in which the symptoms are chronic and not in the least dramatic, is apt for a long time to escape the observation of the untrained eye. It is known by various names—seborrhœa capitis (sicca or oleosa), pityriasis, dandruff, scurf, and in certain more acute phases, eczema of the scalp. Many dermatologists regard it as the most potent cause of baldness in the male. Whatever may be said for the pre-existence of a suitable nidus or terrain, it is the general opinion that the most important part in the production of this condition is played by micro-organisms, and if these premises are correct, a moment's reflection will convince all but the most sceptical that the promiscuous use of a hair brush must be a very potent source of seborrhœic infection, and should be scrupulously avoided.

The third and more demonstrable danger of the communal brush is ringworm of the hairy scalp. This danger, it is true, exists only for children under the age of 16, but is nevertheless, a very real one, especially in schools, and assuredly it explains the frequency with which batches or groups of cases are detected at the same time. It is more than probable that no ordinary means of disinfection would succeed in sterilising a brush that had once been used on a case of tinea tonsurans, for the resistance to all the usual disinfectants of the causal mycelium is notorious, even when it is lying outside the hair shaft.

It is probable that the above diseases are conveyed fairly frequently from head to head, and the possibility of this conveyance could very easily be reduced by (1) the client's insistence on the use of none but his own apparatus; (2) certain simple tonsorial regulations, possibly formulated and enforced by the public health authorities. It must not be forgotten that the shaving brush is also a potential danger although, theoretically at least, not to the same extent as the hair brush, because of its more frequent and more drastic contact with hot water and soap. Shaving brushes from certain countries have, of course, been the proven cause of occasional outbreaks of anthrax in England. Razors, owing to their conformation and structure, and to their being frequently dipped in hot water, are relatively harmless implements of infection, although the blunt and clumsily-handled variety can do a good deal to promote the local condition termed barbers' rash, or sycosis, by the production of minute abrasions of the skin surface. Combs and clippers, too, have been pilloried on occasions, and in some cases the use of clippers may be responsible for boils of the neck.

It is opportune, perhaps, to draw attention to the risks which may be run in ill-conducted manicure and chiropody parlours. Ringworm of the nails is rare, but cases have been traced to the use of a manicure set by several persons, whilst the possibility of conveying whitlow infections, and even syphilis, by manicure will be apparent to any medical reader.

Conditions of hairdressing have certainly improved during the past few years, and antiseptics are freely used, though not always intelligently; but there is much room for further observance of the detail of asepsis in these establishments in view of the great amount of harm which barbers may inflict on the community if they are uninstructed and uncontrolled.

[1] Health Bulletin No. 6 of the Department of Public Health of Victoria, Australia.

FARMING AND VITAMINS.

A PAPER by Colonel R. McCarrison (*Indian Jour. Med. Res.*, 1926, xiv., 351) shows that the manurial history of cultivated land may have an influence on the vitamin content of cereals grown on it. By appropriate feeding experiments on pigeons and rats he shows that millet grown on soil manured with farmyard manure yields a grain of higher nutritive value than when it is cultivated on the same soil manured with a complete mineral artificial manure; soil which has been continuously cropped for many years without being manured at all produced grain of very low nutritive value. The same differences between natural and artificial manures were found for wheat, though this grain had a fairly high value even when no manure had been used. Manuring, therefore, affects quality as well as quantity. No artificial manure has, we believe, been found which will over long periods give yields of wheat equal to those obtained with dung: quantitatively the empirical wisdom of pre-chemical farming is still justified, and these results suggest the possibility that the early agriculturists, growing cereals for their own as much as for other's use, had found its qualitative excellence too. In any case, it is clear that those whom lusty viscera enable to advocate wholemeal bread by personal example will have to consider the source of their grain: "dung-fed bread" may follow "grass-fed milk."

LIGHT AND TYPESETTING.

RECENT investigation into the adverse effect of artificial illumination, as compared with daylight, upon physical efficiency, has been confined to the textile industries. But in the printing trade work is largely done after daylight has failed, or in places where artificial light is needed during daylight hours, and exact information[1] as to the amount of illumination necessary for typesetting by hand is very welcome. Before this investigation was made no knowledge existed as to the loss of efficiency, both in quantity and quality of output, through work being carried on under insufficient light. The standard of output chosen for the test was that attained during a daylight illumination of not less than 50 ft.-candles and sometimes as high as 495, the mean being 160 ft.-candles. The sources of light throughout were so placed as to avoid glare. Gas-filled lamps were used, and care was taken to arrange their position and height so that the angle of "cut off" was greater than 30°. The compositors then worked under artificial light of varying power. With an illumination of

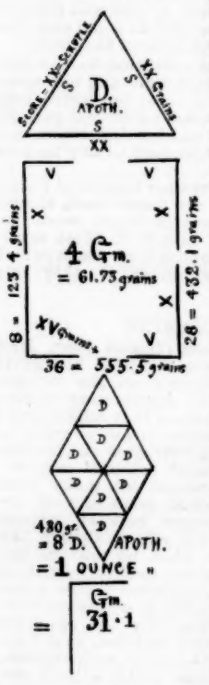
[1] The Relation between Illumination and Efficiency in Fine Work (Typesetting by Hand). Joint Report of Industrial Fatigue Research Board and Illumination Research Committee. Pp. 12. London: H.M. Stationery Office. 1926. 6d.

less than 2 ft.-candles (by no means an exaggerated dimness in ordinary factory life), a quarter of the possible output was lost, mistakes were doubled, and fatigue was materially increased. When the illumination reached 7 ft.-candles—a value higher than that of present general practice—over 10 per cent. of possible output was still lost, and a high percentage of errors occurred; but at this value no fatigue effect was manifest. This is an interesting point, for it suggests that the standard of conditions requisite for health may be considerably below what is economically advantageous from the viewpoint of production. Not until the artificial illumination was raised to about 20-ft. candles did the amount and quality of output reach that of the daylight standard. The provision of such higher degrees of illumination is largely a question of expense, which the results of this investigation show to be worthy of consideration.

WEIGHTS AND MEASURES.

To the Editor of THE LANCET.

SIR,—Apothecaries' weights and measures are still largely used, especially in the United States of America, for, as you said in a review of the "Dispensatory" (THE LANCET, Nov. 13th, p. 1015), practically all American prescriptions are written in this measure. Since the apothecaries' and the metric units are likely to be used side by side for some time, at any rate, some mnemonical aid to memory should be useful. The accompanying diagram may help to visualise the relationship between the two systems. "Drachm" and "gramme," being both of Greek etymology, are represented in the diagram by Greek letters, the triangle standing for delta, the square for four gammas. The D also stands for drachm and the G for gramme. The triangle is to be accepted as equal in value or area to the square, each side of the triangle as being a score of grains or one Scruple (Score and Scruple have the same initial letter), and each quarter of the square as a gamma or one gramme. The long arm of the gamma equals X grains and the short arm V, or XV together. The various relationships between drachm, gramme, and grains can then be seen at a glance or worked out on paper by the ordinary rules of arithmetic. The peculiar significance and sequence also of the additional figures supplied for grammes and grains—namely, 8, 28, and 36 equalling grains 123·4 and 432·1 and 555·5 will not be missed. When it is remembered, moreover, that an English sovereign weighs 123·274 grains and is obviously very near indeed to 8 grammes, or 2 drachms, then that weight can be at once visualised and the 28 grammes is only about 5¼ grains under the weight of three pennies, which weigh one ounce avoirdupois (28·35 grammes). Again, as an example, half the triangle—that is, half a drachm (one of the series usually supplied by scale and weight manufacturers), is seen to be equal to half the square—that is, 2 grammes, or practically 30 grains. Apart from all the details, the fundamental thing is to visualise the delta triangle and the "square" of four gammas. The lozenge, or diamond, shows 8 drachms as equal to one ounce apoth. or troy, or 31·1 grammes.



I am, Sir, yours faithfully,

Dec. 1st, 1926. W.

PINK LUSTRE POTTERY.[1]

Dr. Atwood Thorne has written an interesting little monograph on the results of cultivating a taste for lustre earthenwares. He started his collection in pure chance by the purchase at King's Lynn of a teapot, with a cracked lid, "which reminded him of tea at his grandmother's house." It had upon it as decoration a cottage, trees, stables, a fence, and a conventional design of blobs, and he learned that his purchase was a specimen of a known class of pink lustre pottery which he calls the "cottage style." Complete sets he afterwards found difficult to pick up, but one of the excellent illustrations shows what should be looked for. The illustrations also show varieties of cup, saucer, basin, and jug, some of the last having upon them sporting scenes, while many of the receptacles for beer and cider bear elaborate floral or historic designs. Apparently a large number of the jugs and basins were manufactured for sailors, who affected them as presents to their sweethearts and wives, hence frequent embellishment with ships and compasses, and the many transfers to the pottery of sentimental verses. Dr. Thorne's book will be of use to those who have collected and may induce others to follow their example, when, however, they may not always meet such obliging purveyors as those whose assistance Dr. Thorne acknowledges handsomely.

[1] Pink Lustre Pottery. By Atwood Thorne, M.B. London: B. T. Batsford. 1926. 10*s.* 6*d.*

A MEMORY GOING BACK TO THE AGE OF SIX MONTHS.

THE child of 2 or 3 has an excellent memory, as many a parent will truthfully declare, but we rarely consider the problem of our adult loss of memory for these early years. Most of the events of the first few years of life are forgotten, although it is then that character traits and modes of emotional reaction are largely determined, and it is one of the claims of psycho-analysis that some at least of the infantile memories can be restored. Sometimes, as in the classical case of claustrophobia described by W. H. R. Rivers, the reality of the event concerned has been independently verified. But the memory of Rivers's patient was of a boyhood event, and there is a notable gap between it and those earlier memories, going back to the beginning of the second year, which psycho-analysis is said to reveal. In the *Internationale Zeitschrift für Psychoanalyse* (1926, Bd. xii., Heft 1), Mr. E. Pickworth Farrow, M.A., D.Sc., describes the recovery, by a process of self-analysis, of a memory in which he recalls not only his own actions, but his emotions and intentions in a family episode at the age of six months. In this case the memory was obviously not suggested by an analyst, but to the objection that it may be a phantasy, the writer's only reply is an appeal to personal experience in distinguishing between phantasy and actual memory. Psychology can offer only speculations as to the time of appearance of the consciousness of self, upon which depends not only the memory described by Dr. Farrow, but—what is really more important—the possibility of recognising at the time his own feelings and desires. There is, however, no intrinsic impossibility in the history and the newness and strangeness of the idea that so early a memory can persist in the unconscious must not prevent us from recognising the importance of such observations.

BRIGHTON GUARDIANS AND A NURSES' HOME.

BY 18 votes to 17 the Brighton Guardians have decided to build a nurses' home for the staff of the Poor-law Infirmary at a cost of £35,000. The matter had been before them for a long time, their previous decision being in favour of what the Ministry of Health described as a poor, inadequate, and makeshift scheme (THE LANCET, 1926, ii., 807). After the Ministry had declined to sanction their plan for the conversion of existing accommodation at a cost of £1150, the guardians appointed a special committee, and this unanimously reported that lack of accommodation caused the present difficulty in retaining a competent and contented nursing staff.

DONATIONS AND BEQUESTS.—The late Mr. George Paterson Walker, of Heatherwood, Putney Heath, S.W., left by will £2000 to Kilmarnock Infirmary.—By the will of Captain Athelstane Robert Pryce, late 18th Hussars, J.P., D.L., of Cyfronydd, Welshpool, the testator left £1000 each to the Royal Salop Infirmary and the Eye, Ear, and Throat Hospital for Shropshire and Wales.—The Royal National Orthopædic Hospital, Great Portland-street, W., has received a legacy of £2000 duty free from the late Miss Dora Clarita Abisdid.—Mr. Arthur Humpston, of Woking, formerly of Derby, bequeathed £2025 to the Royal Derby Infirmary to endow two beds in memory of his son, Arthur Robert, who was killed in Flanders in 1917, and after his wife's death £300 each to the Derbyshire Hospital for Sick Children, the Royal Institution for the Deaf and Dumb, Derby, and the Railway Servants' Orphanage, and £7000 to the Royal Infirmary, Derby, to endow beds in memory of himself and his wife.—Mr. Bernhard Barron, of Hove, Sussex, has given £25,000 to hospitals and other philanthropic institutions in celebration of his seventy-sixth birthday.—The late Miss Jessie Ann Thomson, of Carlton-place, Aberdeen, left by will, among other bequests, £1000 each to Aberdeen Royal Infirmary and Aberdeen Royal Hospital for Sick Children; £500 to Morningfield Hospital, and a similar sum to the Indigent Lunatic Fund, Aberdeen.